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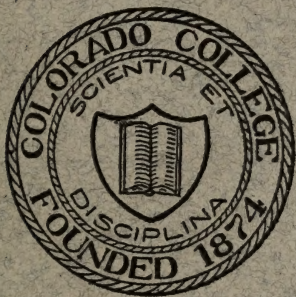
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Colorado College Publication

Bulletin Series 43

General Series 72

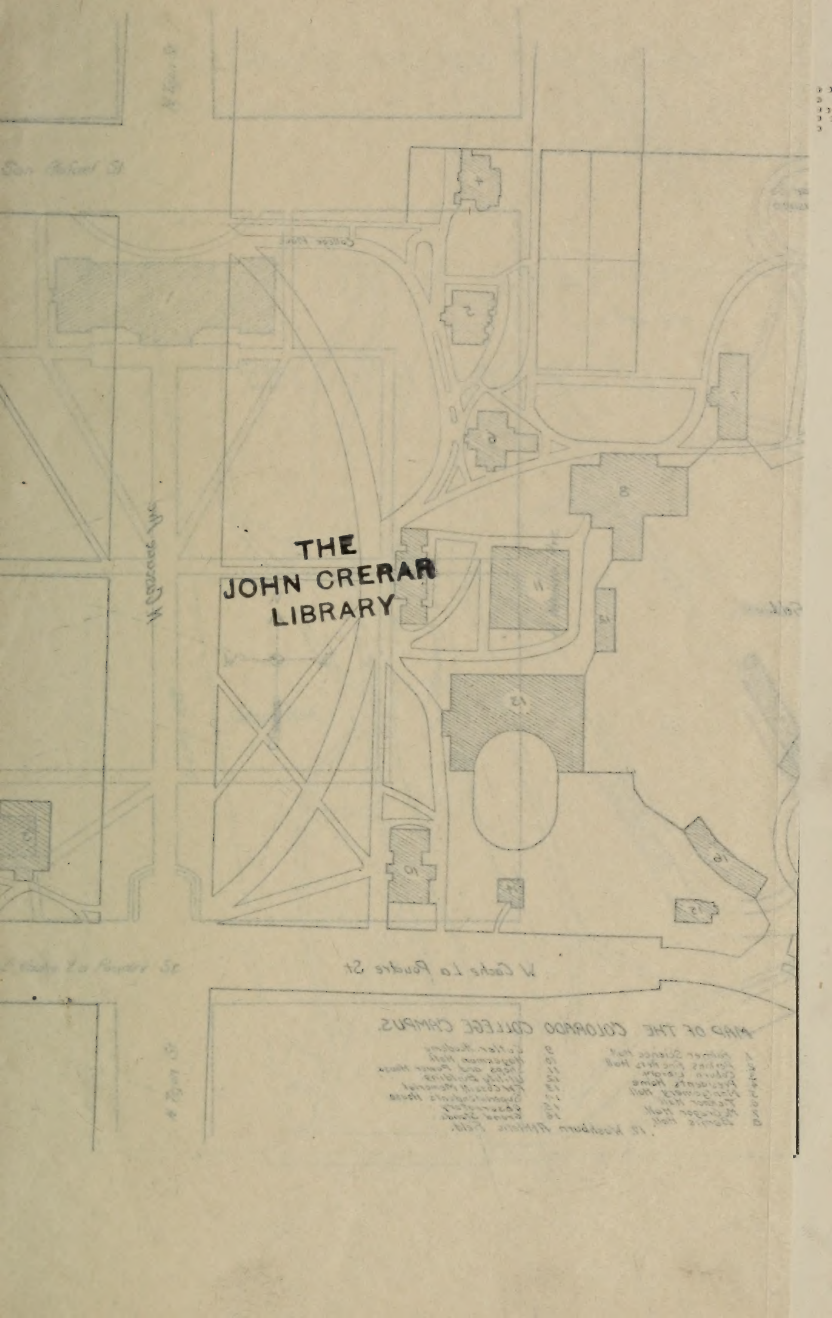


CATALOGUE
MARCH, 1914

COLORADO COLLEGE PUBLICATION

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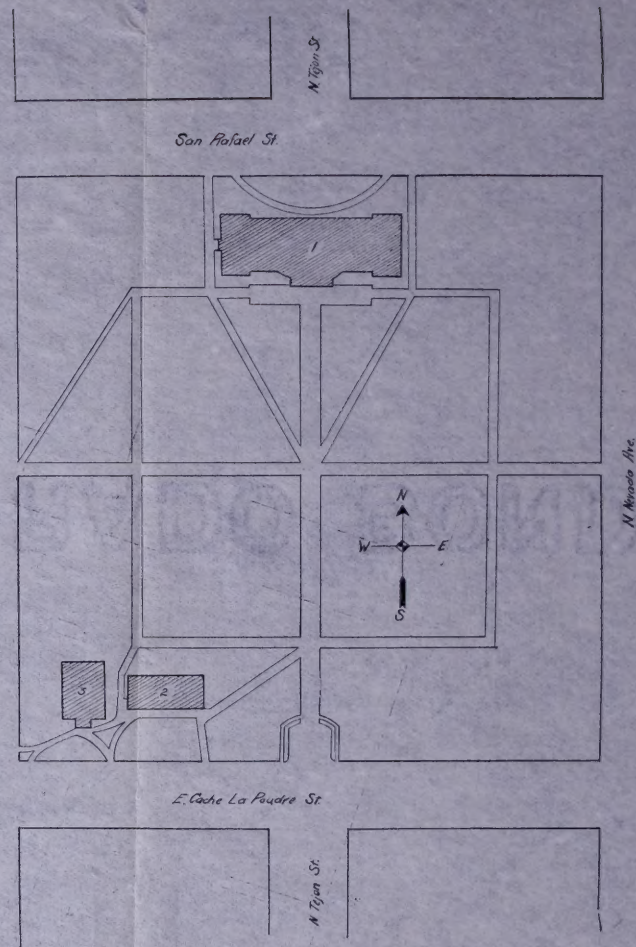
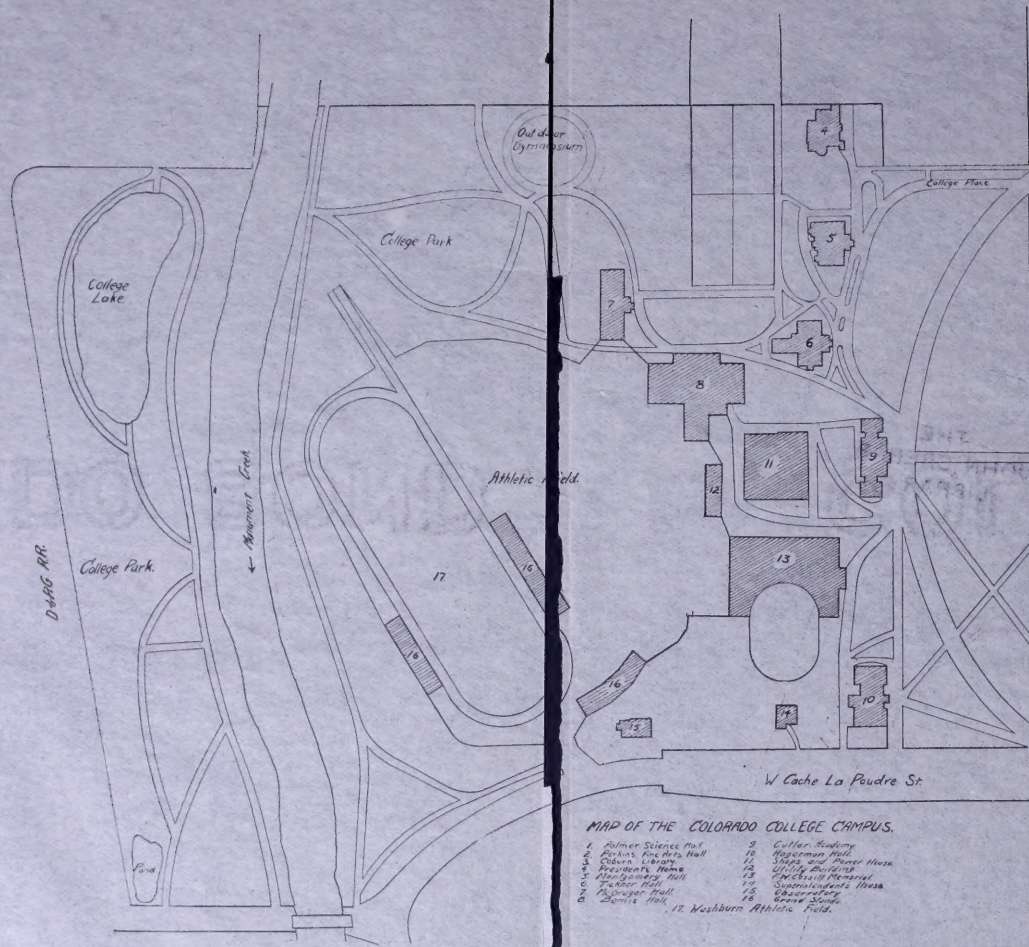
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| 5 | Library |
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| 12 | Library |
| 13 | Library |
| 14 | Library |



COLORADO COLLEGE PUBLICATION

Bulletin Series No. 43

General Series No. 72

FORTIETH ANNUAL
CATALOGUE
of
Colorado College



1913-1914
COLORADO SPRINGS
COLORADO

387
SANDWICH ISLANDS
YANKEE

Contents

	PAGE
Calendar	7
Historical Statement.....	8
Trustees	10
Standing Committees of the Trustees.....	11
College Officers.....	12
Board of Control of the Library.....	13
Faculty	14
Committees of the Faculty.....	20
Admission—	
Registration	22
Entrance Requirements—	
For Courses leading to the Degree of Bachelor of Arts, and Bachelor of Arts in Business Administration and Banking.....	22
For Courses leading to the Degrees of Bachelor of Science in Engineering and Forest Engineer.....	23
Unit Courses.....	24
Admission by Certificate.....	28
Accredited Schools.....	29
Admission to Advanced Standing.....	29
Special Students.....	30
Requirements for Degrees—	
Degree of Bachelor of Arts.....	31
Required Subjects.....	31
Course of Prescribed Study.....	31
Major Subject.....	32
Electives	32
Degree of Bachelor of Arts in Business Administration and Banking	34
Degree of Bachelor of Science in Civil and Irrigation Engineering	35
Degree of Bachelor of Science in Electrical Engineering....	37
Degree of Forest Engineer.....	40
Degree of Master of Arts.....	42
Degrees of Civil Engineer and Electrical Engineer.....	43
Degree of Master of Forestry.....	43
The Harvard Exchange.....	44
Department of Instruction—	
Philosophy	45
Education	47
Greek	48
Latin	49
English	50

Department of Instruction—Continued.	PAGE
Biblical History and Literature.....	52
Public Speaking.....	53
German	53
French	55
Spanish	57
Italian	58
History of Art.....	58
History	59
Political Science.....	61
Economics	61
Sociology	64
Law	64
Business Administration and Banking.....	66
Mathematics	69
Astronomy	70
Chemistry	70
Biology	72
Physics	75
Geology	77
Civil and Irrigation Engineering.....	78
Field Courses in Surveying.....	82
Electrical Engineering.....	83
Mechanical Engineering Courses.....	85
Graphics	86
Shop	87
Forestry	89
Courses for Teachers.....	92
Music	92
Department of Music—	
Faculty	93
Admission	93
Courses of Study.....	93
Fine Arts Major.....	96
Equipment	96
Tuition	96
General Information—	
Location	97
College Buildings.....	97
Library	99
Laboratories and Apparatus—	
Chemistry	101
Biology	102
Physics	102
Geology	103
Psychology	104
Mechanical Laboratories.....	104

General Information—Continued.	PAGE
Civil Engineering Laboratories.....	105
Electrical Engineering Laboratories.....	106
Surveying—Summer School.....	108-109
The Manitou Forest—a Field Laboratory in For- estry	109
Observatory and Meteorological Station.....	110
Museum	111
Religious Life.....	113
Student Publications.....	114
Literary Societies.....	114
Engineers' Club.....	114
Foresters' Club.....	115
The Associated Students of The Colorado College.....	115
Oratorical and Debating Contests.....	115
Physical Training.....	116
Phi Beta Kappa.....	116
College Publication.....	117
College Lecture Course.....	118
Alumni Association.....	118
Expenses	119
Scholarships	120
Prizes	122
Woman's Educational Society.....	122
Hospital Fund.....	123
Needs of College.....	123
Forms of Bequest.....	124
Award of Honors, Scholarships, and Prizes; Phi Beta Kappa Elections, 1913.....	125
Degrees Conferred in 1913.....	126-127
Students—	
Graduate Students.....	128
Undergraduates	128-140
Special and Registered Visitors.....	140
School of Music.....	140-142
Summary	142

Calendar

1914

Jan. 6—	CHRISTMAS RECESS ENDS at 8:15 a. m.....	Tuesday
Jan. 16—	Mid-Year Examinations begin.....	Friday
Jan. 23—	Trustees' Day.....	Friday
Jan. 26—	SECOND HALF-YEAR BEGINS at 8:15 a. m.....	Monday
Feb. 8—	Day of Prayer for Colleges.....	Sunday
Feb. 22—	Washington's Birthday: a holiday.....	Sunday
Mar. 7—	Condition Examinations begin at 8:15 a. m.....	Saturday
Mar. 17—	Last day for registering for Hawley and Mary G. Slocum scholarships.....	Tuesday
Mar. 21—	SPRING RECESS BEGINS at 1 p. m.....	Saturday
Mar. 31—	SPRING RECESS ENDS at 8:15 a. m.....	Tuesday
May 29—	Examinations begin.....	Friday
May 30—	Memorial Day: a holiday.....	Saturday
June 1—	Summer School of Surveying opens in Manitou Park.....	Monday
June 7—	Baccalaureate Sermon.....	Sunday
June 8—	Class Day.....	Monday
June 9—	Annual meeting of Board of Trustees.....	Tuesday
June 10—	COMMENCEMENT.....	Wednesday
Sept. 8—	Residence Halls open.....	Tuesday
Sept. 8—	Registration.....	Tuesday
Sept. 9—	FIRST HALF-YEAR BEGINS at 8:15 a. m.....	Wednesday
Sept. 19—	Conditions Examinations begin at 8:15 a. m.*.....	Saturday
Oct. 9—	Last day for registering for post-graduate work.....	Friday
Oct. 21—	Insignia Day.....	Wednesday
Nov. 25—	Thanksgiving Recess begins at 5 p. m.....	Wednesday
Nov. 30—	Thanksgiving Recess ends at 8:15 a. m.....	Monday
Dec. 18—	CHRISTMAS RECESS BEGINS at 5 p. m.....	Friday

1915

Jan. 5—	CHRISTMAS RECESS ENDS at 8:15 a. m.....	Tuesday
Jan. 15—	Mid-Year Examinations begin.....	Friday
Jan. 22—	Trustees' Day.....	Friday
Jan. 25—	SECOND HALF-YEAR BEGINS at 8:15 a. m.....	Monday
Feb. 21—	Day of Prayer for Colleges.....	Sunday
Feb. 22—	Washington's Birthday; a holiday.....	Monday
Mar. 6—	Condition Examinations begin at 8:15 a. m.....	Saturday
Mar. 16—	Last day for registering for Hawley and Mary G. Slocum scholarships.....	Tuesday
Mar. 20—	SPRING RECESS BEGINS at 1 p. m.....	Saturday
Mar. 30—	SPRING RECESS ENDS at 8:15 a. m.....	Tuesday
May 27—	Examinations begin.....	Thursday
May 30—	Memorial Day: a holiday.....	Sunday
May 31—	Summer School of Surveying opens in Manitou Park.....	Monday
June 6—	Baccalaureate Sermon.....	Sunday
June 7—	Class Day.....	Monday
June 8—	Annual meeting of Board of Trustees.....	Tuesday
June 9—	COMMENCEMENT.....	Wednesday
*Condition Examinations for Engineers, September 12		

Historical Statement

Colorado College is the oldest institution of higher education in the State. In 1874, while Colorado was yet a territory, a College upon a broad Christian foundation was established in Colorado Springs. The authorized announcement for that year contains the following:

"It is the purpose of the Trustees to build a College in which liberal studies may be pursued under positive Christian influences.

. . . The College is under no ecclesiastical or political control. Members of different churches are on its Board of Trustees. . . The character which is most desired for this college is that of thorough scholarship and fervent piety, each assisting the other, and neither ever offered as a compensation for the defects of the other."

From the beginning, the Board of Trustees has been composed of leading professional and business men of Colorado, together with a few Eastern men of similar standing, and has ever been animated by the purpose avowed by the original Board.

A grant of land had been made in advance of the organization of the College in 1873 by the Colorado Springs Company, the founders of the City of Colorado Springs. The Rev. Jonathan Edwards was the first professor and executive officer. The first President, the Rev. James Dougherty, was elected in 1875, and was succeeded in the following year by the Rev. E. P. Tenney. From 1885 to 1888 there was no President, but the work of teaching was carried on without interruption. At this time there was only one building on the campus, now known as Cutler Hall erected in 1880.

In 1888 William Frederick Slocum was elected President. The faculty was at once enlarged, the courses reorganized, and Cutler Academy *incorporated as an associate preparatory school, in which students have since been trained, not only for Colorado College, but for all the leading institutions of the United States. A residence for the President was purchased. Hagerman Hall was built in 1889.

*Discontinued in June, 1914; and Cutler Hall will hereafter be used for Engineering courses.

In the same year the Woman's Educational Society was organized and built Montgomery Hall.

The following buildings have been erected since that time: The N. P. Coburn Library, 1894; the Henry R. Wolcott Observatory. 1894; Ticknor Hall, 1897; Perkins Fine Arts Hall, 1900; McGregor Hall, 1903; Palmer Hall, 1903; Bemis Hall, 1908, Cossitt Hall, 1913. The President's residence was remodeled and enlarged in 1903.

In 1903 a Department of Engineering, with Dr. Florian Cajori as Dean, was opened to meet the increasing demand in the Rocky Mountain region for instruction in applied science. The first class was graduated in 1906.

Through the generosity of General William J. Palmer and Dr. W. A. Bell, who in 1905 presented to the College a tract of 10,000 acres of timber land called Manitou Park, the foundation was laid for a Department of Forestry. This work began in 1906, with Dr. William C. Sturgis as Dean.

A Department of Business Administration and Banking has been established this year with the special income of \$6,000 a year. The work offered is designed to meet the needs of students preparing for business, banking, foreign exchange, journalism, consular service, and secretarial work. The Department will open in September, 1914, with Professor Warren M. Persons as Dean.

The growth of the College in many directions, and the steady elevation of its standards of work, have won for it an assured position. It is able to offer to its students educational facilities of the same grades as are found at Eastern colleges.

Trustees

WILLIAM F. SLOCUM, <i>President of the Board</i>	24 College Place
WILLIS R. ARMSTRONG.....	1420 Culebra Ave
GEORGE W. BAILEY.....	309 McPhee Building, Denver
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EDWARD SMITH PARSONS, *Vice-President*

WILLIAM WALLACE POSTLETHWAITE, *Treasurer.*

HARRIET ARSULA SATER, *Cashier.*

HENRY CLAY HALL, *Attorney for the College.*

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Secretary—MANLY DAYTON ORMES.

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Mr. Sidford F. Hamp.	Mrs. A. E. Touzalin.
Mrs. Robert Kerr.	

Faculty

WILLIAM FREDERICK SLOCUM, D.D., LL.D. 24 College Place
President and Head Professor of Philosophy.

A. B. (Amherst), '74; B.D. (Andover), '78; LL.D. (Amherst), '93;
LL.D. (Nebraska), '94; D.D. (Beloit), '01; LL.D. (Illinois Col-
lege), '04; LL.D. (Harvard), '12; Colorado College, '88.

JOSEPH VALENTINE BREITWIESER, PH.D.
322 E. San Miguel St.
Professor of Philosophy and Education.

A.B. (Indiana University), '07; A.M. (Indiana University), '08;
PH.D. (Columbia University), '10; Colorado College, '10.

MARIANNA BROWN, A.M. McGregor Hall
Registrar.

A.B. (Earlham College), '76; A.M. (Cornell), '94; Colorado College,
'02.

FLORIAN CAJORI, PH.D., LL.D., Sc.D. 1119 Wood Ave.
*Dean of the Department of Engineering and
Head Professor of Mathematics.*

S.B. (Wisconsin), '83; M.S. (Wisconsin), '86; Ph.D. (Tulane), '94;
LL.D. (University of Colorado), '12; LL.D. (Colorado Col-
lege), '13; Sc.D. (University of Wisconsin), '13; Colorado
College, '89.

MOSES CLEMENT GILE, A.M., Litt.D. 1121 N. Tejon St.
Head Professor of Classical Language and Literature.

A.B. (Brown), '83; A.M. (Brown), '86; Litt.D. (Brown and Colo-
rado College), '13; Colorado College, '92.

ELIJAH CLARENCE HILLS, PH.D., Litt.D. 12 College Place
Head Professor of Romance Languages and Literatures.

A.B. (Cornell), '92; Ph.D. (University of Colorado), '06; Litt.D.
(Rollins College), '06; Colorado College, '02.

GEORGE MAXWELL HOWE, PH.D. 1811 N. Nevada Ave.
Head Professor of the German Language and Literature.

A.B. (Indiana University), '94; Ph.D. (Cornell), '01; Colorado Col-
lege, '07.

- RUTH LOOMIS, A.B. Bemis Hall.
Dean of Women.
 A. B. (Vassar), '85; Colorado College, '96.
- FRANK HERBERT LOUD, PH.D. 1203 N. Tejon St.
Professor of Mathematics and Astronomy, Emeritus.
 A.B. (Amherst), '73; A.M. (Harvard), '99; Ph.D. (Haverford), '00;
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- GEORGE EARL MARTIN, B.S. 18 E. San Miguel St.
Professor of Civil Engineering.
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 A.B. (Allegheny), '01; Colorado College, '09.
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 A.B. (Yale), '85; Colorado College, '92.
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Librarian.
 A.B. (Yale), '85; B.D. (Yale), '89; Colorado College, '04.
- EDWARD SMITH PARSONS, B.D., LITT.D. 1130 Wood Ave.
*Vice-President, Dean of the Department of Arts and Sciences, and
 Bemis Head Professor of English.*
 A.B. (Amherst), '83; A.M. (Amherst), '86; B.D. (Yale), '87;
 Litt.D. (Amherst), '03; Colorado College, '92.
- WARREN MILTON PERSONS, B.S. 123 Tyler Place
*Dean of the Department of Business Administration and Banking
 and Professor of Economics and Finance.*
 B.S. (Wisconsin), '99; Colorado College, '12.
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Head Professor of Biology.
 B.S. (Tabor), '97; Ph.D. (Yale), '01; Colorado College, '03.
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 A.B. (New York University), '75; E.M. (Columbia School of
 Mines), '78; A.M. (New York University), '79; Sc.D. (Colorado
 College), '13; Colorado College, '80.

WILLIAM CODMAN STURGIS, PH.D.

Corner Cascade Ave. and Uintah St.

*Dean of the Department of Forestry, and Lecturer on
Vegetable Pathology.*A.B. (Harvard), '84; A.M. (Harvard), '87; Ph.D. (Harvard), '89;
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S.B. (Harvard), '07; Colorado College, '11.

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M.E. in E.E. (Ohio State University), '07; Colorado College, '10.

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HOWARD MOORE, C.E.

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Assistant Professor of Graphics.

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1335 N. Nevada Ave.

Assistant Professor of Public Speaking.

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* Absent during the year 1913-'14.

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A. B. (Vassar), '99; A.M. (Columbia), '01; Ph.D. (Columbia), '11; Colorado College, '11.
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B.S. (Michigan), '10; Colorado College, '13.
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M.D. (University of Denver), '02; Colorado College, '04.
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Director of the Mechanical Laboratories.
B.S. in M.E. (University of Colorado), '12; Colorado College, '13.
- EVA TOLMAN CANON, A.B. Bemis Hall
Assistant Librarian.
A.B. (Colorado College), '04; Colorado College, '08.
- JOHN ALEXANDER CARRUTHERS, LL.B. Independence Bldg.
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LL.B. (Michigan), '12; Colorado College, '14 (Jan.)
- GUY WENDELL CLARK, A.B. 318 E. St. Vrain St.
Instructor in Chemistry.
A.B. (Colorado College), '12; Colorado College, '12.

- SARAH RUSSELL DAVIS McGregor Hall
Instructor in Physical Training for Women.
 Graduate (Boston Normal School of Gymnastics), '07; Graduate
 Studies Berlin and Stockholm, '10; Colorado College, '12 (Jan.)
- CHRISTIAN HERMAN GOETZ, B.S., M.F. 219 E. Dale St.
Instructor in Forestry.
 B.S. (Michigan Agricultural College), '07; M.F. (ibid), '13; Colo-
 rado College, '13.
- FREDERICK REED HASTINGS, A.M. 124 W. Columbia St.
Lecturer on History of Philosophy.
 Ph.B. (Colorado College), '91; A.M. (Colorado College), '92; Colo-
 rado College, '99.
- MICHAEL BERNARD HURLEY, LL.M. 501 Mining Exch. Bldg.
Lecturer on Law.
 LL.B. (Minnesota), '01; LL.M. (Yale), '02; Colorado College, '12.
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Instructor in French and Spanish.
 A.B. (Colorado College), '10; Certificat d'études françaises, (Uni-
 versity of Lausanne), '12; Colorado College, '12.
- JOSEPHINE KELLERMAN 1342 N. Wahsatch Ave.
Instructor in German.
 Höhere Töchter Schule, Bonn; Colorado College, '11.
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Instructor in English.
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- CLAUDE JAMES ROTHGEB. 1211 N. Weber St.
Director of Athletics, and Instructor in Physical Training.
- LOIS ELLETT SMITH, A.B. McGregor Hall
Instructor in Biology.
 A.B. (Colorado College), '12; Colorado College, '12.
- EDWARD DANFORTH HALE, A.M. 1428 N. Nevada Ave.
*Dean of the Department of Music, and Professor of the Theory and
 Literature of Music and the Pianoforte.*
 A.B. (Williams), '80; A.M. (Williams), '83; Professor at the New
 England Conservatory, '85-'04; Colorado College, '05.

ROBERT HAMILTON BERRYHILL 324 E. Yampa St.
Instructor in Pianoforte.

Colorado College, '10.

MRS. GEORGE MAXWELL HOWE 1811 N. Nevada Ave.
Instructor in Violin.

Cincinnati Conservatory of Music, '01-'03; Stanton College, Natchez, Miss., '03-'05; Sternsches Konservatorium, Berlin, '05-'06; Woman's College, Columbia, S.C., '06-'07; Colorado College, '10.

VIOLA PAULUS 2021 N. Tejon St.
Instructor in Voice Culture.

The German Wallace College School of Music, '99-'01; Northwestern School of Music, '01-'05; Pupil of Mme. Emma Freyhofer, Carlton Hackett; Instructor in American Conservatory, Chicago, '05-'09; Colorado College, '10.

EXCHANGE PROFESSORS AND LECTURERS.

AT COLORADO COLLEGE.

CLIFFORD HERSCHEL MOORE, PH.D.

Professor of Latin at Harvard University.

Exchange Professor in the Classical Literature for the second half-year, 1913-'14.

AT HARVARD UNIVERSITY.

HOMER EDWARDS WOODBRIDGE, A.M.

Professor of English.

Exchange Professor at Harvard University for the full year, 1913-'14.

SECRETARIES

MAUDE SMITH BARD 1006 N. Wahsatch Ave.
Secretary to the President.
 Colorado College, '12.

OLIVE RUTH HURLBUT, A.B. Bemis Mall.
Secretary to the Dean of Women.
 A.B. (Smith), '07; Colorado College, '13.

MRS. JOSIE RAMBO MORROW, A.B. 2116 N. Nevada Ave.
Secretary to the Dean of the Department of Arts and Sciences.
 A.B. (University of Kansas), '06; Colorado College, '10.

Committees of the Faculty, 1913-1914

- Accredited Schools*.—Mr. Breitwieser, Mr. Gile, Mr. Motten, Mr. Park, Mr. Thomas.
- Advanced Degrees*.—Mr. Hills, Mr. Cajori, Mr. Parsons, Mr. Persons, Mr. Schneider.
- Athletics*.—Mr. Park, Mr. Baker, Miss Davis, Mr. Moore, Mr. Motten, Mr. Rothgeb, Mr. Schneider, Mr. Thomas.
- Catalogue*.—Mr. Noyes, Miss Mahin, Mr. Moore, Mr. Motten.
- College Lecture Course*.—Mr. Thomas, Mr. Jameson, Miss Jenkins, Mr. Noyes, Mr. Ormes, Miss Spaulding, Mr. Tileston.
- Correlation of College Courses*.—Mr. Breitwieser, Mr. Cajori, Mr. Parsons, Mr. Persons, Mr. Schneider, Mr. Slocum.
- Cossitt Memorial*.—Mr. Schneider, Mr. Cajori, Miss Davis, Miss Loomis, Mr. Motten, Mr. Park, Mr. Rothgeb, Mr. Slocum.
- Courses of Study of Individual Students*.—Mr. Parsons, Miss Brown, Mr. Cajori, Miss Loomis, Mr. Noyes.
- Discipline*.—Mr. Slocum, Miss Brown, Mr. Cajori, Mr. Gile, Miss Loomis, Mr. Parsons, Mr. Schneider.
- Engineering*.—Mr. Cajori, Mr. Blakey, Mr. Clark, Mr. Martin, Mr. Moore, Mr. Thomas, Mr. Tileston.
- Forestry*.—Mr. Sturgis, Mr. Cajori, Mr. Goetz, Mr. Terry.
- Fraternities*.—Mr. Cajori, Mr. Hills, Mr. Motten, Mr. Parsons, Mr. Slocum.
- Hagerman Hall*.—Mr. Motten, Mr. Baker, Mr. Bowers, Mrs. Cajori, Mrs. Gile, Mrs. Parsons, Mrs. Slocum.
- Library*.—Mr. Ormes, Miss Canon, Miss Sahm, Mr. Slocum, Miss Spaulding.
- Music*.—Mr. Hale, Mrs. Howe, Mr. Parsons, Miss Sahm, Miss Spaulding.
- Publications*.—Mr. Slocum, Mr. Cajori, Mr. Hills, Mr. Howe, Mr. Schneider.
- Publicity*.—Mr. Howe, Mr. Motten, Mr. Noyes, Mr. Persons.
- Schedule*.—Mr. Albright, Mr. Breitwieser, Mr. Clark, Mr. Martin, Mr. Noyes, Mr. Terry.
- Scholarships*.—Mr. Slocum, Miss Brown, Mr. Cajori, Mr. Hills, Miss Loomis, Mr. Parsons.
- Social Life*.—Mr. Slocum, Miss Brown, Mr. Cajori, Mr. Hills, Miss Loomis, Mr. Parsons.
- Student Government*.—Mr. Slocum, Miss Brown, Miss Davis, Mr. Gile, Miss Loomis.
- Student Activities*.—Mr. Motten, Miss Jenkins, Miss Loomis, Miss Mahin, Mr. Tileston.
- Student Self-Help*.—Mr. Motten, Mr. Moore, Mr. Strieby.

Class Officers

<i>Senior</i>	Mr. Slocum
<i>Junior</i>	Mr. Breitwieser
<i>Sophomore</i>	Mr. Schneider
<i>Freshman</i>	Mr. Hills
<i>Special</i>	Mr. Noyes

Admission

REGISTRATION.

Before registering, each candidate must present to the Dean a certificate of moral character, signed by some responsible person in the community in which he has made his home. The College reserves the right to exclude at any time students whose conduct or academic standing renders them undesirable members of the college community; and in such cases, the fees due the college are not refunded or remitted. School authorities are asked to mail credits direct to the Registrar.

Students are required to register promptly and attend the first exercise in their courses. A fee for late registration will be charged as follows: \$1.00 for registration, first half-year, later than noon on Saturday, September 12, 1914; \$1.00 for registration, second half-year, later than noon on Saturday, January 23, 1915.

ENTRANCE REQUIREMENTS FOR

COURSES LEADING TO THE DEGREE OF BACHELOR OF ARTS, AND THE
DEGREE OF BACHELOR OF ARTS IN BUSINESS ADMINISTRATION
AND BANKING.

1. ENGLISH, 3 units.*
2. HISTORY, 1 unit.
3. MATHEMATICS, 2 units (preferably 3).
4. LATIN, GERMAN OR FRENCH, 4 units, of which 2 must be Latin.†
5. SCIENCE, 2 units (to be selected from the list of sciences given below in 6; but the student is advised to offer Chemistry and Physics. If the student offers Greek, only one unit of science is required.)
6. ELECTIVES, sufficient to make a total of 15 units.
English, 1 unit.
Greek, 1, 2 or 3 units.
German, 1 or 2 units.
French, 1 or 2 units.
Spanish, 1 or 2 units.
Mathematics, 1 unit.
History, 1 or 2 units.

*A unit is a course covering a school year of not less than 35 weeks, with 4 or 5 periods of at least 45 minutes each a week. Only one unit of deficiency is allowed for entrance.

†If a student has not taken preparatory Latin, but brings 15 other units of acceptable work, he will be allowed to begin Latin in college, the work counting toward his degree.

Civil Government, $\frac{1}{2}$ unit.
 Chemistry, 1 unit.
 Physics, 1 unit.
 Physiology, $\frac{1}{2}$ unit.
 Zoology, $\frac{1}{2}$ unit.
 Botany, $\frac{1}{2}$ unit.
 Physiography, $\frac{1}{2}$ unit.
 Geology, $\frac{1}{2}$ unit.
 Mechanical Drawing, 1 unit.

ENTRANCE REQUIREMENTS
 FOR

COURSES LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN
 ENGINEERING AND THE DEGREE OF FOREST ENGINEER.
 (15 UNITS.)

The requirements for admission to the engineering courses are as follows:

1. MATHEMATICS (3 units)—(a.) Algebra through simultaneous quadratic equations; (b.) Elementary Plane Geometry; (c.) Solid and Spherical Geometry; (d.) Review Algebra, Ratio and Proportion, Binomial Theorem, Arithmetical and Geometrical Progressions, Elements of Permutations and Combinations. Plane Trigonometry is desirable but not necessary. A thorough preparation is of great importance.
2. PHYSICS (1 unit)—One year's course. See p. 28.
3. CHEMISTRY (1 unit)—One year's course. See p. 28.
4. ENGLISH (3 units)—As in the College of Arts. See p. 24.
5. FOREIGN LANGUAGES (2 units)—Two years. See p. 27.
6. AMERICAN, AND ENGLISH OR ANCIENT HISTORY (1 unit)—One year's course in each. See pp. 25, 26.
7. ELECTIVES (4 units)—Preferably in modern languages and history. See pp. 22, 23.

Candidates who offer satisfactory evidence of having completed a preparatory course equivalent to the above requirements will be admitted without condition into the Freshman Class. Each candidate must bring from the principal of the school last attended a personal statement as to his grade of scholarship.

Students who have had a high school course in trigonometry may receive advanced standing in this subject in the School of En-

gineering by passing an examination at the beginning of the college year.

The Faculty accepts credits from other colleges of good standing. All credits should be mailed to the Registrar.

UNIT COURSES IN PARTICULAR SUBJECTS.

1. ENGLISH—(3 units).

- (a) A practical knowledge of grammar and the elements of rhetoric.
- (b) A careful study of the following works, recommended by the Conference on Uniform Entrance Requirements in English, from the point of view of explanation of allusions, meanings of unusual words, acquaintance with the periods of literary history represented, etc., as well as that of subject matter, structure, and literary quality:
Shakespeare's *Macbeth*; Milton's *Comus*, *L'Allegro*, and *Il Penseroso*; Burke's *Speech on Conciliation with America*, or Washington's *Farewell Address* and Webster's *First Bunker Hill Oration*; Macaulay's *Life of Johnson*, or Carlyle's *Essay on Burns*.
- (c) A less minute study of the following works, sufficient to give the candidate a clear idea of their important parts:

READING.—Group I. (Two to be selected): *The Old Testament*, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther; Homer's *Odyssey*, with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII; Homer's *Iliad*, with the omission, if desired, of books XI, XIII, XIV, XV, XVII, XXI; Virgil's *Aeneid*. The *Odyssey*, *Iliad*, and *Aeneid* should be read in English translations of recognized literary excellence. *For any unit of this group a unit from any other group may be substituted.*

Group II. (Two to be selected): Shakespeare's *Merchant of Venice*, *Midsummer Night's Dream*, *As You Like It*, *Twelfth Night*, *Henry the Fifth*, *Julius Caesar*.

Group III. (Two to be selected): Defoe's *Robinson Crusoe*, Part I; Goldsmith's *Vicar of Wakefield*; Scott's *Ivanhoe*, or *Quentin Durward*; Hawthorne's *The House of the Seven Gables*; Dickens' *David Cop-*

perfield, or *Tale of Two Cities*; Thackeray's *Henry Esmond*; Mrs. Gaskell's *Cranford*; George Eliot's *Silas Marner*; Stevenson's *Treasure Island*.

Group IV. (Two to be selected): Bunyan's *Pilgrim's Progress*, Part I.; The *Sir Roger de Coverley Papers* in the *Spectator*; Franklin's *Autobiography*, (condensed); Irving's *Sketch Book*; Macaulay's *Essay on Lord Clive*, and *Essay on Warren Hastings*; Thackeray's *English Humorists*; *Selections* from Lincoln, including at least the two *Inaugurals*, and the *Speeches in Independence Hall* and at *Gettysburg*, *Last Public Address*, *Letter to Horace Greeley*, along with a brief memoir or estimate; Parkman's *Oregon Trail*; Thoreau's *Walden*, or Huxley's *Autobiography*, and *Selections from Lay Sermons*, including the addresses on *Improving Natural Knowledge*, *A Liberal Education*, and *A Piece of Chalk*; Stevenson's *Inland Voyage*, and *Travels With a Donkey*.

Group V. (Two to be selected): Palgrave's *Golden Treasury* (First Series) Books II and III, with special attention to Dryden, Collins, Gray, Cowper, and Burns; Gray's *Elegy in a Country Churchyard*, and Goldsmith's *Deserted Village*; Coleridge's *Ancient Mariner*, and Lowell's *Vision of Sir Launfal*; Scott's *Lady of the Lake*; Byron's *Childe Harold*, Canto IV, and *The Prisoner of Chillon*; Palgrave's *Golden Treasury* (First Series) Book IV, with especial attention to Wordsworth, Keats, and Shelley; Poe's *Raven*; Longfellow's *Courtship of Miles Standish*, and Whittier's *Snow Bound*; Macaulay's *Lays of Ancient Rome*, and Arnold's *Sohrab and Rustum*; Tennyson's *Gareth and Lynette*, *Lancelot and Elaine*, and *The Passing of Arthur*; Browning's *Cavalier Tunes*, *The Lost Leader*, *How They Brought the Good News from Ghent to Aix*, *Home Thoughts from Abroad*, *Home Thoughts from the Sea*, *Incident of the French Camp*, *Hervé Riel*, *Phœdippides*, *My Last Duchess* and *Up at a Villa—Down in the City*.

Although the books mentioned above are recommended as preparation for this part of the requirement, they are not prescribed. Books of equal merit, covering a similar range of literary types, will be accepted as equivalents.

2. HISTORY—(1 unit.) An outline knowledge of the leading facts of either Ancient, Greek and Roman, Mediaeval and Modern, American, or English History.

- (a) Ancient History: Myers and Botsford, Myers, West, or an equivalent.
- (b) Greek and Roman: Botsford, Allen, or an equivalent.
- (c) Mediaeval and Modern: Myers, or an equivalent.
- (d) American: Channing, McLaughlin, Thomas, Johnston, or an equivalent.
- (e) English: Larned, Coman and Kendall, or an equivalent.

3. MATHEMATICS—(2 or 3 units.)

- (a) Algebra, through simultaneous quadratic equations ($1\frac{1}{2}$ units).
- (b) Elementary Plane Geometry; the first five books of Phillips and Fisher's, Wells's, or Wentworth's *Geometry*, or an equivalent (1 unit).
- (c) Solid and Spherical Geometry ($\frac{1}{2}$ unit).
- (d) Plane Trigonometry ($\frac{1}{2}$ unit).

It is recommended that Algebra and Plane Geometry be reviewed in the last year of the preparatory course.

4. LATIN—

- (a) An accurate and ready knowledge of grammatical forms. *Caesar's Gallic Wars*, Bks. I.-IV., or an equivalent. Prose Composition based on Caesar. Careful attention should be given from the beginning to correct pronunciation of the Latin and to the use of idiomatic English in translation. (2 units).
- (b) Cicero: Seven orations. The following are recommended: The four orations against Cataline, Archias, the Manilian Law, Marcellus. Translation at sight of easy passages of prose. Prose Composition. (1 unit).
- (c) Vergil: *Aeneid*, Bks. I.-VI. Prose Composition based on Cicero. (1 unit).

5. GREEK—

- (a) White's First Greek Book, or an equivalent. Xenophon's *Anabasis* (20 or 30 pages). Practice in sight translation. The rules of accentuation. (1 unit).
- (b) Four books of the *Anabasis*. Reading at sight. Prose Composition based on the *Anabasis*. Careful grammatical study. (1 unit).

- (c) Three books of the *Iliad* with prosody and dialectic forms. Sight translation. Prose Composition. (1 unit).

6. GERMAN, FRENCH, AND SPANISH—(1 or 2 units).

- (a) The work of the first year should comprise: (1) Drill in the rudiments of grammar; (2) careful drill in pronunciation; (3) the memorizing and frequent repetition of easy colloquial sentences; (4) abundant easy exercises; (5) the reading in graduated texts of from 75 to 100 pages of German, or from 100 to 175 pages of French or Spanish prose.
- (b) The work of the second year should comprise: (1) The careful reading of from 150 to 200 pages of German literature, or from 250 to 400 pages of French or Spanish literature, in the form of easy stories or historical or biographical sketches; (2) accompanying practice, as before, in the translating from English of easy variations from the matter read, and also in off-hand reproduction, sometimes orally and sometimes in writing, of the substance of short and easy selected passages; (3) continued drill in the rudiments of grammar.

A good selection of texts for the second year; arranged in suitable order for reading, would be:

GERMAN Andersen, *Märchen or Bilderbuch*; Leander, *Träumereien*; Hauff, *Das kalte Herz*; Zschokke, *Der zerbrochene Krug*; Hillern, *Hoher als die Kirche*; Storm, *Immensee*; Baumbach, *Des Schwiegersohn*; Heyse, *L'Arrabiata*, *Das Mädchen von Treppi*, *Anfang und Ende*; Jensen, *Die Braune Erica*.

FRENCH (1) Mairat, *la Tâche du petit Pierre*; Malot, *Sans famille*, or Bruno, *le Tour de la France*; (2) Labiche et Martin, *le Voyage de M. Perrichon*; Halévy, *l'Abbé Constantin*, or Mérimée, *Colomba*; (3) Dumas, *la Tulipe noire*, or Erckmann-Chatrian, *Madame Thérèse*; (4) Sarcey, *le Siège de Paris*, or Lamartine, *Jeanne d'Arc*; (5) Daudet, *Contes*, or George Sand, *la Mare au diable*.

SPANISH (1) Valera, *El pájaro verde*, and Alarcón, *El Capitán Veneno*, or about 150 pages of selected short stories; (2) Pérez Galdós, *Doña Perfecta* or *Marianela*; (3) Echegaray, *Ó locura ó santidad*, Ramos y Vidal, *Zaragüeta*, or Moratín, *El sí las niñas*.

A third and a fourth year of German or French will be accepted as an elective entrance subject, if the work has been done satisfactorily. Candidates are ad-

vised to present two units of German, French or Spanish, as preparatory to admission to the German 2, French 2, or Spanish 2, given in the college.

7. PHYSICS—(1 unit). Not less than two hours a week of recitation and four of laboratory work; Millikan and Gale's *First Course in Physics*; Carhart and Chute's *Elements of Physics*, or an equivalent.
8. CHEMISTRY—(1 unit). Williams' *Elements of Chemistry*, or an equivalent.
9. PHYSIOLOGY—($\frac{1}{2}$ unit). Text book work should cover such a text as Blaisdell's *Practical Physiology*. In addition, the course should include a rough dissection, by the teacher, of the frog and the cat, and a microscopic examination of the more important tissues.
10. ZOOLOGY—($\frac{1}{2}$ unit). Textbook work equal in amount to that contained in Kellogg, Jordan, or Davenport; laboratory work on the structure of at least ten forms and a comparison with other types. The drawings and descriptions in the candidate's laboratory notebook must be certified by the teacher.
11. BOTANY—($\frac{1}{2}$ unit). A knowledge of the structure and more important physiological processes of flowering plants, of the modifications of parts for special functions, of the plant societies, of pollination and dissemination. It is also desirable that the candidate have the ability to identify ordinary seed plants. A laboratory notebook certified by the teacher must be presented by the candidate. Such texts as Bergen's *Foundation of Botany* and Coulter's *Plant Studies* are recommended.
12. PHYSIOLOGY—($\frac{1}{2}$ unit). Tarr, Davis, Dryer, or an equivalent.
13. GEOLOGY—($\frac{1}{2}$ unit). Scott's *Introduction to Geology*, or an equivalent, with practice in the determination of the commoner rocks, igneous, sedimentary, and metamorphic.
14. MECHANICAL DRAWING—(1 unit).

ADMISSION BY CERTIFICATE.

Candidates who offer satisfactory evidence of having completed a preparatory course equivalent to the above requirements will be admitted without condition into the Freshman Class. Each candidate must bring from the principal of the school last attended a personal statement as to his grade of scholarship.

ACCREDITED SCHOOLS.

The following schools are on the accredited list. A certificate of the satisfactory completion, in any of them, of any study required for admission to the College, will be accepted:

Alamosa High School.	Idaho Springs High School.
Arvada High School.	Lamar High School.
Aspen High School.	Las Vegas High School.
Cañon City High School.	Leadville High School.
Cañon City So. Side High School.	Littleton High School.
Central City High School.	Longmont High School.
Cheyenne County High School.	Loveland High School.
Cheyenne (Wyo.) High School.	Manitou High School.
Colorado City High School.	Manzanola High School.
Colorado Springs High School.	Monte Vista High School.
Cripple Creek High School.	Montrose High School.
Delta High School.	Omaha, (Neb.) High School.
East Denver High School.	Otero Co. High School, La Junta.
North Denver High School.	Ouray High School.
West Denver High School.	Palisades High School.
South Denver High School.	Paonia High School.
Denver Manual Training High School.	Pueblo High School, Dist. No. 1.
Douglas Co. H. S., Castle Rock.	Pueblo High School, Dist. No. 20.
Durango High School.	Rocky Ford High School.
Eaton High School.	Saguache Co. High School.
Florence High School.	Salida High School.
Fort Collins High School.	State Teachers' College High School.
Fort Morgan High School.	Sterling High School.
Fruita High School.	St. Stephen's Academy.
Georgetown High School.	Telluride High School.
Glenwood Springs High School.	Trinidad High School.
Golden High School.	Victor High School.
Grand Junction High School.	Walsenburg High School.
Greeley High School.	Wheat Ridge High School, Alcott.
Gunnison High School.	Miss Wolcott's School, Denver.
Holly High School.	Windsor High School.
Holyoke High School.	

Certificates from schools not on the accredited list will be considered as the merits of each case may warrant.

ADMISSIONS TO ADVANCED STANDING.

Students who offer satisfactory evidence of having completed studies equivalent to those offered by the College will be received into advanced classes. The Faculty usually receive certificates from

other colleges, but reserve the right to examine any candidate.

SPECIAL STUDENTS.

Special students will be received, at the discretion of the Faculty, into such classes as they are qualified to enter. It is the rule of the College that such students must attend the examinations as well as the ordinary recitations of their classes, subject to the same conditions as other students.

Several of the courses of lectures which form part of the College instruction, particularly in the department of Philosophy, are open to the public on payment of a fee of \$5.00 for each half-year course (see p. 119), and without any requirements of examination.

Requirements for Degrees

DEGREE OF BACHELOR OF ARTS

In the Department of Arts and Sciences, only one degree is given, that of Bachelor of Arts. To secure this the student is required to complete a course of study consisting of (1) certain prescribed studies, (2) a specified number of hours in a major subject, (3) enough free electives to bring his work up to the total requirement of 120 hours,* making an average of 15 hours a week throughout the four years. The credit unit is 1 hour per week for a half-year. In courses continuing throughout the year no credit is given for a half-year's work. To satisfy the requirements for the degree of Bachelor of Arts, a student must obtain a grade above 69% in at least one-half the hours taken in Colorado College. It is recommended that students who are planning to work their way, in large part, through College, take five years for their course. No student will be allowed to take a degree from Colorado College who has not been a resident in the institution for at least one full year.

REQUIRED SUBJECTS.

All candidates for the degree of A.B. must, in addition to their elective hours, have finished the following prescribed courses: English 1, either 26 or 27, and 4, 5, or 9; Mathematics 1, 2, and 3; two years of foreign language, one year of science, one year of history, Economics 1 or Political Science 2; Philosophy 1, 2, and 3. In order to maintain regularity in classification, these subjects should be taken as scheduled below.

COURSE OF PRESCRIBED STUDY.

FRESHMAN YEAR.....Mathematics 1, 2, and 3, first half-year, 3 hours; second half-year, 5 hours.‡
English 1, each half-year, 3 hours.
Other subjects, as below, to make a total of 15 hours.
‡Greek, Latin, German, French, or Spanish, either one or two courses, each half-year, 3 or 6 hours.
‡Science: Biology, Chemistry, Physics, one course, each half-year, 3 hours.

*Except in the course leading to the degree of Bachelor of Arts in Business Administration and Banking (see p. 34).

‡Students offering Solid Geometry for admission are not required to take Math. 2.

‡Two years of foreign language (two years in one language or one year in each of two languages), and one year of science are prescribed for graduation. This work should, if possible, be finished in the first two years.

SOPHOMORE YEAR.....English 26 or 27, and either 4, 5, or 9, each half-year, 3 hours.

History 1, each half year, 2 hours.

Science, each half-year, 3 hours, (if not taken in the Freshman year).

Philosophy 1 must be taken in Sophomore year by all intending to take their majors in Philosophy or Education.

JUNIOR YEAR.....Philosophy 1, each half-year, 3 hours.

Economics 1, first half-year, 3 hours; or
Political Science 2, second half-year, 3 hours.

SENIOR YEAR.....Philosophy 2 and 3, 8 hours.

MAJOR SUBJECT.

In addition to the above prescribed subjects, each student shall select a major subject, if possible before the end of the Sophomore year, and in any case not later than the beginning of the Junior year. The professor in charge of the major subject will act as the student's adviser, and will have authority, with the Dean, to require the completion of work amounting to 30 hours in the major subject or in the major subject and in such minor subject as he shall consider necessary, or collateral work. Mention of the major subject will be made in the diploma. No work done in Colorado College will be counted toward the completion of a major subject if the grade is below C (70).

Any one of the following may be selected by the student as his major subject: (1) Philosophy; (2) Education; (3) Greek; (4) Latin; (5) English; (6) German; (7) Romance Languages; (8) Economics; (9) History; (10) Mathematics; (11) Astronomy; (12) Physics; (13) Chemistry; (14) Biology; (15) Geology; (16) Fine Arts.*

All courses except English 1, Mathematics 2, French 1, German 1, Economics 1, and Spanish 1, may be counted as part of the requisite 30 hours.

Petitions to change the major subject will be granted only when approved by the professors in charge of both the old and the new subjects; and the student will be held to all the requirements of the new major subject. In no case may the major subject be changed later than the beginning of the Senior year.

ELECTIVES.

The student shall elect, in addition to the prescribed subjects and the major subject, a sufficient number of courses to bring the total amount of his College work up to 120 hours (except in Business Administration (see p. 33).

*For description of Fine Arts major, see p. 96.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS IN BUSINESS ADMINISTRATION AND BANKING.

The four years' course leading to the degree of Bachelor of Arts in Business Administration and Banking is designed to offer a thorough training in those branches of knowledge fundamental to business, using that term in its broadest sense. It is the aim of the Department of Business Administration and Banking to emphasize those fundamental facts and principles of business which are necessary to its administration, but which are difficult or impossible to acquire in the ordinary routine of work in a complex business organization. The aim is, not to make students familiar with business routine, but to train and instruct them so that when they enter business they will understand the significance of the work that they happen to be doing in its relation to the whole. A training in economics, finance, law, accounting, insurance, advertising and the like, familiarity with business terms, the reading of commercial journals, and the daily discussion of banking and industrial topics will enable the student to make the transition from college to business more readily than he otherwise could.

The requirements for the degree of Bachelor of Arts in Business Administration and Banking are the same as those for the regular degree of Bachelor of Arts, except as follows: Economics 1 and Economics 17 are required in the sophomore year in addition to the other requirements (see p. 34); 68 half-year hours are required in the junior and senior years, of which 48 half-year hours are prescribed; and a thesis on some business topic will be required of all seniors, to count as part of the prescribed work.

In planning the course certain considerations have been kept in mind, i.e., to prevent over-specialization by broad requirements in the freshman and sophomore years; to develop a professional spirit among the juniors and seniors by requiring greater specialization than obtains under the system of major studies; to emphasize the ethical side by requiring Philosophy 2 and 3 in the senior year; to secure the elasticity necessary because of the diverse needs of the students by means of options and free electives. Thus, a student planning to enter journalism should elect courses in English, history, and political science; one intending to enter the consular service should elect modern languages, political science and law; for banking he should elect Economics 9 and 20 and Business 4, 9, and 10; for actuarial and statistical work he should elect mathematics and Economics 19; for mercantile and manufacturing pursuits he should elect Economics 9 and 20, and Business 3, 4, 7, and 8. Other combinations will suggest themselves to those preparing for chamber of commerce secretaryships, teaching of commercial branches in high schools, etc.

FRESHMAN YEAR.

<i>First Half-Year.</i>	Credit hours per week.	<i>Second Half-Year.</i>	Credit hours per week.
Mathematics 1, p. 69.....	3	Mathematics 2 and 3, p. 69.....	3 or 5
English 1, p. 50.....	3	English 1, p. 50.....	3
Modern Language	3	Modern Language	3
Science	—	Science	3
	12		12
Elective	3	Elective	3

SOPHOMORE YEAR.

<i>First Half-Year.</i>	Credit hours per week.	<i>Second Half-Year.</i>	Credit hours per week.
English 26 or 27, p. 50....	3	English 4, 5, or 9, p. 50	3
History 1, p. 59.....	2	History 1, p. 59.....	2
Modern Language	3	Modern Language	3
Economics 1, p. 61.....	3	Economics 17, p. 62.....	3
	11		11
Electives	4 or 5	Electives	4 or 5

JUNIOR YEAR.

<i>First Half-Year.</i>	Credit hours per week.	<i>Second Half-Year.</i>	Credit hours per week.
Business 1, p. 66.....	3	Business 2, p. 66.....	3
Economics 18, p. 62.....	3	Economics 18, p. 63.....	3
Economics 9 and 20, pp. 62-3 or Business 3, p. 66.....	3	Business 4 or 8, pp. 67-8, or Political Science 2, p. 61....	3
Modern Language	2	Modern Language	2
	11		11
Electives	6	Electives	6

SENIOR YEAR.

<i>First Half-Year.</i>	Credit hours per week.	<i>Second Half-Year.</i>	Credit hours per week.
Business 5, p. 67.....	3	Business 5, p. 67.....	3
Business 6, p. 67.....	2	Business 6, p. 67.....	2
Business 7 or 9, pp. 67-8.....	2	Economics 19, p. 63, or Business 10, p. 68.....	3
Philosophy 2, p. 45.....	4	Philosophy 3, p. 46.....	4
Thesis (Business 11)	2	Thesis (Business 11), p. 68....	2
	13		13
Electives	4	Electives	4

REQUIREMENTS FOR THE DEGREES OF BACHELOR OF
SCIENCE IN CIVIL AND IRRIGATION ENGINEERING

CIVIL ENGINEERING.

The four years' course leading to the degree of Bachelor of Science in Civil Engineering is designed to afford a thorough analytical training as well as numerous and extended practical exercises in those matters that pertain to the profession of the civil engineer, including all kinds of structures and public works, and also the various developments and applications of power by the use of electric, steam, water, and air motors.

The theoretical portion of the instruction is based largely upon the courses given in the departments of mathematics and physics, and the results obtained are applied to practical engineering work. Special stress is laid upon the design by the student of the various structures and machines which the civil engineer is called upon to construct in the practice of his profession.

The instruction is given by lectures, demonstrations by the student, and frequent conferences, co-ordinate with which the work of design is carried on. It covers comprehensively the subjects of surveying, water supply of cities and towns, irrigation, sanitary engineering, including sewage disposal, graphic and analytic treatment of all metallic structures, foundations, retaining and reservoir walls, high masonry dams, sewer systems, hydraulic engineering, rivers and harbors, hydraulic, steam and electric motors*

FRESHMAN YEAR.

<i>First Half-Year.</i>	Credit Hours per week.	<i>Second Half-Year</i>	Credit Hours per week.
Algebra (Math. 1), p. 69.....	4	Trigonometry (Math. 3), p. 69.....	4
Advanced Chemistry (Chem. 2), p. 70.....	3	Advanced Chemistry (Chem. 2) p. 70.....	3
Mechanical Drawing (Graphics 1), p. 86.....	2	Descriptive Geometry (Graphics 2), p. 87.....	4
Woodwork (Shop 1), p. 88.....	2	Rhetoric and Comp. (Eng. 1) p. 50.....	3
Rhetoric and Composition (English 1), p. 50.....	3	Modern Language.....	3
Modern Language.....	3	Plane Surveying (Civil 1), p. 78.....	2
Descriptive Geometry (Graphics 2), p. 87.....	1		

Summer Course in Surveying (Civil 201), p. 82, four weeks in Manitou Park, credit 4 hours.

*For ease in reference, associated courses in the departments of Civil Engineering, Irrigation Engineering, and the Summer School of Surveying, as listed on pp. 78-82, are numbered to indicate such association (1, 21, 201, etc.), a group of ten numbers being assigned for each general subdivision.

SOPHOMORE YEAR.

<i>First Half-Year.</i>	Credit Hours per week.	<i>Second Half-Year</i>	Credit Hours per week.
Analytical Geom. (Math. 4) p. 69.....	3	Analytical Geometry (Math. 5), p. 69.....	2
Differential Calculus (Math. 6), p. 69.....	3	Integral Calculus (Math. 6) p. 69.....	4
Gen. Physics (Phys. 3) p. 75.....	3	Gen. Physics (Phys. 4) p. 76.....	3
Experimental Physics (Phys. 5), p. 76.....	2	Experimental Physics (Phys. 6), p. 76.....	1
Machine Design (Graph. 3) p. 87.....	2	Precision of Measurements (Phys. 8), p. 76.....	1
Modern Language.....	2	Graphic Statics (Graphics 4) p. 87.....	2
		Modern Language.....	2
		Forging (Shop 3), p. 88.....	1
		Field Astronomy (Civil 2), p. 78.....	3

JUNIOR YEAR.

<i>First Half-Year.</i>	Credit Hours per week.	<i>Second Half-Year</i>	Credit Hours per week.
Mechanics (Math. 12), p. 69....	3	Mechanics (Math. 12), p. 69....	3
Resistance of Materials (Civil 81), p. 81.....	3	Resistance of Materials (Civil 81), p. 81.....	2
Hydraulics (Civil 41), p. 80....	2	Testing Laboratory (Civil 82), p. 82.....	1
Power Plants (Electrical 15)....	2	Stresses (Civil 83), p. 82.....	3
Masonry (Civil 31), p. 79.....	2	Power Plants (Electrical 15), p. 85.....	2
Advanced Surveying (Civil 5), p. 78.....	2	Railway Engineering (Civil 21), p. 79.....	3
Geology 1, p. 77.....	3		
Hydraulic Laboratory (Civil 42), p. 80.....	1		
Railway Curves (Civil 20), p. 79.....	2		

Summer Courses in Surveying (Civil 221 and Civil 241), p. 83,
four weeks in Manitou Park, credit 4 hours.

INSPECTION TRIP

SENIOR YEAR.

<i>First Half-Year.</i>	Credit Hours per week.	<i>Second Half-Year</i>	Credit Hours per week.
Foundations (Civil 33), p. 80....	2	Bridge Design (Civil 84), p. 82 4	
Bridge Design (Civil 84), p. 82 3		Irrigation (Civil 51), p. 81.....	3
Masonry Structures (Civil 32), p. 80.....	2	Sanitary Engineering (Civil 62), p. 81.....	2

<i>First Half-Year.</i>	Credit Hours per week.	<i>Second Half-Year</i>	Credit Hours per week.
Water Supply (Civil 61), p. 81	3	Roads and Parks (Civil 71)	
Elementary Law (Law 1)		p. 81.....	2
p. 64.....	3	Railway Economics	
Electrical Engineering		(Civil 22), p. 79.....	2
(Electrical 14), p. 85.....	3	Electrical Engineering	
Economics (Econ. 1), p. 61....	3	(Electrical 14), p. 85.....	3
Thesis.		Thesis.	

INSPECTION TRIP.

IRRIGATION ENGINEERING.

In order to meet the demands for men trained in the design, location, and construction of irrigation works, a special course in irrigation engineering is offered. The first year of this course is the same as in the Civil Engineering course; the second, third and fourth years differ from the regular Civil Engineering Course in the substitution, for those subjects that bear less directly upon irrigation problems, of special work in agricultural chemistry, soil physics, advanced work in hydraulics, and the design of stone, timber, and steel irrigation structures. The full equipment of the Civil Engineering department, including surveying instruments, testing machines, hydraulic laboratory and maps and plans, is available to the students of Irrigation Engineering.

The course differs from that in Civil Engineering in the following respects:

SOPHOMORE YEAR.—Civil 2 and Graphics 4 are omitted and Agricultural Chemistry (Chem. 8) is taken during the year.

JUNIOR YEAR.—During the second half-year, Irrigation (Civil 51) and Geology 1, replaces Railway Engineering (Civil 21).

SENIOR YEAR.—During the second half-year, Hydraulic Engineering (Civil 43), and Meteorology take the place of Roads and Parks (Civil 71), and Railway Economics (Civil 22).

[The requirements for admission to Civil and Irrigation Engineering are given on page 23. For description of Laboratories, see p. 105.]

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

The study of electricity begins in the Sophomore year, when, in the physics course, the student learns the fundamental phenomena of electricity and magnetism, the quantitative statement in mathematical form of their relations; and performs in the laboratory

basic experiments which illustrate these phenomena and impress upon the mind the quantitative relations. In the Junior year the experiments are of a more technical and commercial character. The theory is studied in more detail and with the use of the calculus. Particular attention is given in this year to commercial measuring instruments, and to direct-current machines. A portion of the work is performed in accordance with the "preliminary report system," under which the student, from the general principles imparted in the theoretical courses, writes and receives back corrected, before performing a test, a critical statement of the theory and laboratory method of the test to be performed. In the Junior year are also given most of those courses like steam engineering and hydraulic engineering, without which the training of the electrical engineer would be too narrow for practical purposes. In the Senior year the preliminary report system is followed entirely; and the emphasis is placed upon alternating currents, questions of transmission and distribution, and engineering questions of cost.

A certain amount of reading in history, literature and popular science is required during each summer vacation in the course.

FRESHMAN YEAR.

<i>First Half-Year.</i>	Credit Hours per week.	<i>Second Half-Year</i>	Credit Hours per week.
Advanced Chemistry (Chem. 2), p. 70.....	3	Trigonometry (Math. 3), p. 69.....	4
Algebra (Math. 1), p. 69.....	4	Descriptive Geometry (Graphics 2), p. 87.....	4
Drawing (Graphics 1), p. 86..	2	Advanced Chemistry (Chem. 2), p. 70.....	3
Woodwork (Shop 1), p. 88....	2	Pattern-Making (Shop 2), p. 88.....	1
Rhetoric and Composition (English 1), p. 50.....	3	Forging (Shop 3), p. 88.....	1
Modern Language.....	3	Rhetoric and Composition (English 1), p. 50.....	3
Descriptive Geometry (Graphics 2), p. 87.....	1	Modern Language.....	3

SOPHOMORE YEAR.

<i>First Half-Year.</i>	Credit Hours per week.	<i>Second Half-Year</i>	Credit Hours per week.
Analytical Geometry (Math. 4), p. 69.....	3	Analytical Geometry (Math. 5), p. 69.....	2
Differential Calculus (Math. 6), p. 69.....	3	Integral Calculus (Math. 6), p. 69.....	4
Qualitative Analysis (Chem. 3), p. 71.....	3	Quantitative Analysis (Chem. 4), p. 71.....	3
Experimental Physics (Phys. 5), p. 76.....	2	General Physics (Phys. 4), p. 76.....	3
General Physics (Phys. 3), p. 75.....	3	Experimental Physics (Phys. 6), p. 76.....	2
Machine Design (Graphics 3), p. 87.....	2	Precision of Measurements (Phys. 8), p. 76.....	1

[CONTINUED ON NEXT PAGE.]

<i>First Half-Year.</i>	Credit Hours per week.	<i>Second Half-Year</i>	Credit Hours per week.
Modern Language.....	2	Mechanism (Graphics 5) p. 87.....	2
		Modern Language.....	2
		Machine Shop (Shop 4), p. 88.....	1

JUNIOR YEAR.

<i>First Half-Year.</i>	Credit Hours per week.	<i>Second Half-Year</i>	Credit Hours per week.
Mechanics (Math. 12), p. 69..	3	Mechanics (Math. 12), p. 69....	3
Resistance of Materials (Civil 81), p. 81.....	3	Resistance of Materials (Civil 81), p. 81.....	2
Hydraulics (Civil 41) p. 80.....	2	Testing Laboratory (Civil 82), p. 82.....	1
Thermodynamics (Electrical 16), p. 86.....	2	Alternating-Current Theory (Electrical 2), p. 83.....	3
Elements of Elect. Eng. (Electrical 1), p. 83.....	4	Direct Current Elect. Eng. Lab. (Electrical 8), p. 84.....	3
Advanced Electrical Lab. (Electrical 3), p. 83.....	2	Electrical Measuring Instru- ments (Electrical 6), p. 84....	1
Elementary Economics.....	3	Power Plants (Electrical 15), p. 85.....	2
		Machine Work (Shop 5), p. 88	1
		Surveying (Civil 7), p. 79.....	1

SENIOR YEAR.

<i>First Half-Year.</i>	Credit Hours per week.	<i>Second Half-Year</i>	Credit Hours per week.
Alternating-Current Machin- ery (Electrical 5), p. 84.....	3	Alternating Current Machin- ery (Electrical 5), p. 84.....	3
Alternating-Current Elect. Eng. Lab. (Electrical 11) p. 85.....	3	Electrical Engineering (Electrical 10), p. 85.....	2
Alternating-Current Instru- ments (Electrical 7), p. 84....	1	Alternating-Current Elect. Eng. Lab. (Electrical 11) p. 85.....	3
Electrical Distribution (Electrical 9), p. 84.....	2	Electrical References (Electrical 13), p. 85.....	1
Electrical References (Electrical 13), p. 85.....	1	Hydraulic Engineering (Civil 43), p. 80.....	2
Experimental Engineering (Electrical 17), p. 86.....	1	Thesis.	
Elementary Law (Law 1), p. 64.....	3		
Alternating-Current Measure- ment (Electrical 4), p. 83.....	1		
Dynamo Design (Electrical 12), p. 85.....	1		

REQUIREMENTS FOR THE DEGREE OF FOREST ENGINEER

The Department of Forestry was established in the spring of 1905. The foundation was laid through the generosity of General Palmer and Dr. Bell, who presented the College a tract of 10,000 acres of land called Manitou Park. Of this, 3,200 acres of agricultural land have been sold, the proceeds being applied toward an endowment for the Department. The remainder of the tract, now known as the Manitou Forest, is timbered and is used for field instruction.

The aim of the Department is to give to students who intend to adopt Forestry as a profession a thorough training which will fit them for positions in the Government Forest Service, or as State Foresters, teachers of Forestry, or expert foresters in private employ.

The location of the Department of Forestry in the National Forest region enables the College to fit its students particularly for administrative work in the Forest Service. The Department is excellently prepared to give the necessary instruction concerning the relations of the Forest Service with the grazing business, the mining business, and other enterprises characteristic of the West. Its location near the National Forest makes it possible to secure the frequent aid of Forest Service officers for lectures or instruction. Reference to the detailed descriptions of the courses in Timber Estimating, Forest Planting, and Forest Improvement Work, will indicate the possibilities afforded by the National Forests for gaining practical experience in timber cruising, timber sales, planting and nursery practice, grazing, etc.

Students who have completed two years of College work (60 semester hours), in which the following courses, or their equivalents, have been included, will be admitted to instruction in the Department of Forestry as candidates for the degree of Forest Engineer: Biology 1, 2, 3, (pp. 72-3); Chemistry 1 or 2, (p. 70); Civil 1 and 201, (pp. 78, 82); Civil 5 and 211, (pp. 78, 83); English 1, and 26 or 27, (p. 50); German 1, 3, (p. 53); Geology 1, (p. 77); Mathematics 1, 2, 3, (p. 69) (High School credit for Mathematics 2 is acceptable). Students who studied one or more than one modern language in preparatory school are advised to continue the study of the language in which they are most advanced. A reading knowledge of German is especially desirable. Further, the courses in Economics, Mineralogy, Meteorology, and Physics are commended as elective courses which will materially strengthen the student's Forestry Course.

The course in Forestry covers two years, and from the beginning of the college year until December 1 is conducted in the Manitou Forest, near Woodland Park, Colorado; from December 1 until the spring vacation in Colorado Springs; and from the spring vacation until June 1 in the Manitou Forest. In the Senior year the work of the spring term may be conducted elsewhere.

JUNIOR YEAR.

Fall Term, Manitou Forest.

	Half Year Hours
Forest Mensuration, (see Forestry 1, page 89) first half of term	5
Forest Surveying and Timber Estimating, (see Forestry 2, page 89); second half of term.....	5

Winter Term—Colorado Springs.

Dendrology, (see Forestry 3, page 89); lectures or recitations 5 hours a week and 6 hours of laboratory work.....	5
Wood Technology, (see Forestry 4, page 89); lectures 2 hours a week and laboratory 4 hours.....	2
Silviculture, (see Forestry 5, page 89); lectures 3 hours a week and sivilal field studies.....	3
Forest Protection, (see Forestry 6, page 90); lectures 2 hours a week	2

Spring Term—Manitou Forest and Monument Nursery.

Field Work in Silviculture, (see Forestry 5, page 89).....	3
Forest Planting, (see Forestry 7, page 90).....	5
Forest Improvement Work, (see Forestry 8, page 90).....	2

SENIOR YEAR.

Fall Term—Manitou Forest.

Forest Management, (see Forestry 9, page 91); lectures 5 or 6 hours a week and daily field or office work.....	10
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Winter Term—Colorado Springs.

Forest Utilization, (see Forestry 10, page 91); lectures 5 hours a week.....	4
Forest Geography, (see Forestry 11, page 91); lectures or recitations 5 hours a week.....	4
Forest Policy, (see Forestry 12, page 91); lectures or recitations 3 hours a week.....	2

Spring Term.

Senior Field Work, (see Forestry 13, page 91).....	10
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NOTE:—See also Forestry 3, page 89; Forestry 7, page 97; Forestry 10, page 91.

Advanced Degrees

Permission to do graduate work in Colorado College does not necessarily imply admission to candidacy for the Master's degree.

A graduate student who wishes to become a candidate for the degree must make application to the Committee on Advanced Degrees under whose supervision his work will be carried on. He is urged to make application at an early date, in order that the Committee may have time to pass on his qualifications for admission. The programme of study for the degree and the subject of the dissertation must also be submitted to the committee for approval.

DEGREE OF MASTER OF ARTS

The Master's Degree is conferred subject to the following conditions:

(1) The applicant must have received the Bachelor's degree from some reputable college or university, and must have a reading knowledge of French or German,—preferably both.

(2) The applicant must pursue in residence a minimum course of nine hours of advanced work a week for one year. The work shall include both a major and a minor subject, and at least five hours a week shall be taken in the major subject. In addition, the applicant must present a dissertation that embodies the result of a careful investigation, such dissertation to represent the equivalent of at least three hours of lectures a week for one year. The dissertation must be approved by the heads of the departments in which the major and minor subjects are taken, before the applicant is permitted to present himself for the final examination. The dissertation must be handed in not later than May 15, typewritten on pages 8½ by 11 inches, and a copy deposited with the College librarian.

(3) The final examination shall be oral and public, and it shall be in the presence of the professors in charge of the major and minor subjects and of a third professor. In the examination the applicant must give evidence not only that he has done satisfactorily the minimum requirements, as stated above, but also that he has a satisfactory knowledge of the general fields within which the major and minor subjects lie.

The latest date of registration for post-graduate students is October 9.

The fees are \$50 a year for tuition, \$5 for the diploma, and \$1 to bind the thesis.

Applications for the Master's Degree should be sent to the Chairman of the Faculty Committee on Advanced Degrees who will furnish information about courses.

DEGREES OF CIVIL ENGINEER AND ELECTRICAL ENGINEER

The degrees of Civil Engineer (C.E.) and Electrical Engineer (E.E.) will be granted to graduates of Colorado College under the following conditions:

- (1) The candidate must have the degree of Bachelor of Science in the course in which he seeks the professional degree.
- (2) He must have been in practical work at least three years since receiving his Bachelor of Science degree.
- (3) He must be registered and engaged in study under direction two years before he presents himself for his degree.
- (4) The assigned work done must be equivalent, in the judgment of the department in which he seeks his professional degree, to fifteen half-year hours.
- (5) A thesis upon an approved subject and the record of the candidate's professional experience must be submitted one month before the candidate appears for a degree.
- (6) The candidate must appear before a Committee from the Engineering Faculty for an oral examination.
- (7) The candidate will be judged on his thesis work, general engineering knowledge and professional record.

The fees are \$25 each year and \$5 for a diploma.

DEGREE OF MASTER OF FORESTRY

Students who have been awarded a degree other than that of Forest Engineer, either at Colorado College, or at other institutions of high standing, will be awarded the degree of Master of Forestry upon completion of courses equivalent to those required for the degree of Forest Engineer, in Trigonometry, Graphics, Civil Engineering, Botany, Meteorology, Geology, and all courses in Forestry. Students who enter Colorado College with the intention of obtaining the degrees of Bachelor of Arts and Master of Forestry should be able to complete their course in six years. Such candidates for the degree of Bachelor of Arts should, while students in the College of Arts, major in Science. Graduates of other institutions who are candidates for the degree of Master of Forestry should, if they are well grounded in science, be able to obtain this degree in two years. Students of other institutions who have not studied Forestry cannot hope to obtain the degree of Master of Forestry in less than two years.

On account of the increasing demand that the technical forester have a broad, liberal education, the course leading to the degree of Master of Forestry is strongly recommended.

THE HARVARD EXCHANGE

Two years ago an arrangement was made whereby Harvard University, each year, sends a professor for a half-year to four Western colleges, Colorado College, Grinnell, Knox, Beloit, dividing the time equally among them; and each of them, in return, sends a member of its faculty to Harvard for a half year, one-third of his time to be given to instruction, and the remainder to graduate or research work.

The third Harvard professor to offer work according to this plan, at Colorado College, is

CLIFFORD HERSCHEL MOORE, PH.D., Professor of Latin.

Professor Homer Edwards Woodbridge, A.M., Professor of English, is exchange professor at Harvard for the full year, 1913-'14.

Departments of Instruction

PHILOSOPHY.

The required work in this department extends over the Junior and Senior years, and gives the student a knowledge of the development of thought in the several departments of philosophy. The various seminary courses afford training in the study and discussion of important psychological, sociological, and ethical questions.

PRESIDENT SLOCUM, PROFESSOR BREITWIESER.

1. *Psychology and Logic*.—Required of all Juniors. Each half-year, 3 hours.

A. The first twenty-six weeks of the year are given to neurology and psychology, and the remaining nine weeks to logic. The work of the first half-year includes the following topics:

- (a) Introduction to psychology and philosophy.—PRESIDENT SLOCUM.
- (b) The anatomy and physiology of the nervous system as bearing on psychology.
- (c) Instincts, attention, habit-formation, sensation, and perception.

B. The second half-year is devoted to the remaining topics in psychology and to logic.

In 1913-'14, Angell's *Psychology* was used as a text. The satisfactory performance of a number of experiments will be required. Outside assigned readings and the preparation of papers on special topics will also be included. The equipment of the psychological laboratory (p. 104) is drawn upon for demonstration material.

PRESIDENT SLOCUM.

2. *History of Philosophy*.—Required of all Seniors, open only to Seniors. Prerequisite, Course 1. First half-year, 4 hours.

A. *Lectures, Recitations, and Conferences*.—3 hours.

- (a) Study in Comparative Religions.
- (b) Greek Philosophy. 20 lectures.
- (c) Modern Philosophy. Lectures: (1) The Rise and Fall of Scholasticism; (2) The Beginnings of Modern Philosophy—Bacon and Descartes; (3) Spinoza; (4) Locke; (5) The Skeptical

Movement in France; (6) Leibnitz; (7) Berkeley; (8) Hume; (9) Kant, the Critique of Pure Reason; (10) Kant, the Transcendent Element in his Philosophy; (11) Hegel; (14) Spencer—The Philosophy of Evolution.

B. *Metaphysical Seminary*.—1 hour.

Papers and discussion upon the following subjects:

- (a) Great Religions of the World.
- (b) Psychological Basis of Religious Faith.
- (c) Psychological Basis of Æsthetics.
- (d) Philosophical Thought in England during the Nineteenth Century.
- (e) Evolution: Its History, Development, and Results.

3. *Ethics*.—Required of all Seniors, open only to Seniors. Prerequisite, Philosophy 2. Second half-year, 4 hours.

A. *Theory of Morals*.—Lectures, theses, and discussions, 3 hours.

- (a) The Fundamental Principles of Ethics. 12 lectures.
- (b) Christian Ethics. 3 lectures.

B. *Ethical Seminary*.—1 hour.

Papers and discussion upon the following subjects:

- (a) Modern Social and Sociological Problems.
- (b) The Ethical View of Citizenship.
- (c) A study of Educational Theories from an Ethical Standpoint.

4. *Modern German Philosophy*.—Second half, Senior year, 2 hours.

5. *The Philosophical Movement in England*.—Second half, Senior year, 2 hours.

PROFESSOR BREITWIESER AND ASSISTANT.

8. *Contemporary Problems in Philosophy*.—Pragmatism. Second half-year, 2 hours. (Not given in 1913-'14.)

9. *Experimental Psychology*.—A laboratory course. Experimental methods and typical experiments both qualitative and quantitative. Psychological tests and their applications to school problems. For the equipment of the laboratory, see p. 104. Laboratory fee, \$2.50. 1 hour recitation, laboratory hours to be arranged, each half-year, credit 2 hours.

10. *Advanced Course in Psychology*.—Experimental work and reading from psychological literature will be done. Open to stu-

dents having completed Philosophy 1. First half-year, 2 hours.

11. *Mental Pathology and Hygiene*.—A study of normal and abnormal suggestion, fixed ideas, morbid-mindedness, insanity, hypnotism, hysteria, multiple personalities, faith cures, etc. Each half-year, 1 hour. Given in 1915-'16 and alternate years. Open to Juniors and Seniors.

12. *Psychology of Religion*.—Open to Juniors and Seniors only. Starbuck, James, Davenport, King, Ames, etc. The genetic and functional points of view in the interpretation of the religious consciousness. First half-year, 1 hour. Given in 1914-'15 and alternate years.

15. *Social Psychology*.—A study of the various texts in social psychology, discussions, and selected readings. Second half-year, 1 hour. Given in 1914-'15 and alternate years. Open to students who have had Philosophy 1.

MR. HASTINGS.

13. *The Evolution of Religious Thought*.—Second half-year, 2 hours.

(1) Psychological Basis of Religion; (2) Spiritual Import of Greek Philosophy; (3) Religious Development of the Hebrews; (4) Rise of Christianity; (5) Source and Substance of Revelation; (6) Paul and His Mission; (7) Fusion of Greek and Christian Thought; (8) Mediæval Conceptions of Christianity; (9) Spirit of the Renaissance; (10) Cardinal Principles of the Reformation; (11) Philosophical Awakening; (12) Eighteenth Century Conceptions of Religion; (13) Skepticism; (14) Voltaire and Rousseau; (15) Lessing and Freedom of Thought; (16) Philosophy of Kant; (17) German Idealism; (18) Mysticism; (19) Romanticism; (20) Goethe: Religion and Culture; (21) German Criticism of Dogma; (22) Coleridge and Wordsworth; (23) Carlyle and His Philosophy of Life; (24) Newman and the Church Revival; (25) Rise of the Critical Mind; (26) Comte and His Religion of Humanity; (27) Agnosticism; (28) Religious Import of Evolution; (29) Arnold and Ethical Idealism; (30) Martineau and Christian Theism; (31) Philosophical Idealism; (32) Present Day Tendencies in Religious Thought.

EDUCATION.

PROFESSOR BREITWIESER.

[Education courses are open to Juniors and Seniors only.]

1. *History of Education*.—A study of the more important educational theories and movements in their larger relationships. The historical problems are treated as far as possible from the standpoint of social psychology, and their relation to

present day questions is emphasized. Monroe's *A Brief Course in the History of Education* is used as a basis. First half-year, 2 hours.

2. *Modern Educational Development*.—A continuation of the History of Education in which emphasis is put upon the movements affecting present systems. Readings from current educational literature. Second half-year, 2 hours.
3. *Mental Development*.—Kirkpatrick's *Fundamentals of Child Study* and his *Genetic Psychology* are used as a point of departure. Class reports and discussions. First half-year, 2 hours.
4. *Educational Psychology*.—A study of the psychology of pupils in the schools, adolescence, sex, deficient children, environment and heredity. Second half-year, 2 hours.
5. *Research Work in Problems of Educational Psychology*.—For graduate students and advanced undergraduates. Hours to be arranged.
6. *Practical Teaching*.—This course meets the requirements of the State Board of Examiners concerning Practice Teaching. Provision is made for practice teaching in both primary and secondary grades. Either half-year, 4 hours.
7. *School Problems*.—This course is designed to give practical instruction to those who expect to teach. Reports, discussions, and lectures will be given on school organization, management, teaching, etc. Second half-year, 2 hours.
8. *Religious Pedagogy*.—A study of religious education from the developmental point of view. (Not given in 1914-'15.)

NOTE 1.—The opportunities for practice teaching are made possible by the generous cooperation of the officers and teachers of the public school systems of Colorado Springs and Colorado City, and of the San Luis School.

NOTE 2.—For courses in other departments intended especially for teachers, see Greek 7, Latin 8, English 25, German 12, French 6 and 7, Spanish 5 and 6, Mathematics 4, Physics 11.

GREEK.

PROFESSOR GILE, ASSISTANT PROFESSOR SPAULDING.

1. *Elementary Course*.—Designed to cover the entrance requirements with sufficient fullness to enable a student to enter Greek 2, provided he complete privately during the summer the first four books of the *Anabasis*. Each half-year, 3 hours.

2. Homer, selections from the *Odyssey* and *Iliad* in the original, and the whole of both poems in translation; Plato, *Apology* and *Crito*; Herodotus, selections. Each half-year, 3 hours.
3. *Drama*.—Æschylus, *The Septem* and *Prometheus*; Sophocles, *Antigone*; the remainder of Æschylus' and Sophocles' plays in translation; Euripides, *Alcestis* and *Medea*. Each half-year, 3 hours.
4. *History*.
 - (a) Herodotus; careful study of the period of the Persian Wars. Readings from the dramatists for further illustration of the life of the period; or,
 - (b) Thucydides, the Sicilian Expedition. Parallel readings in Curtius, Grote, and other modern historians. Selections from Plutarch's *Lives*. One-half year, 3 hours.
- *5. *Philosophy*.—Plato, *Phaedo*. Selections from other dialogues, and from the works of Xenophon. Zeller's *Socrates and the Socratic Schools*. One-half year, 3 hours.
6. *Epic and Lyric Poetry*.—Homer, Hesiod, and Pindar. One-half year, 3 hours.
7. *A Course Designed for Teachers*.—Selections from Xenophon; composition; careful grammatical study. One-half year, 3 hours.
8. *New Testament Greek*.—Open to students who have had one year of Greek. Second half-year, 3 hours.

NOTE 1.—For a course in Greek Drama for English readers, see English 20; for the classical epic in translation, see English 2.

NOTE 2.—For a course in Greek History, see History 7.

LATIN.

PROFESSOR GILE, ASSISTANT PROFESSOR SPAULDING.

1. Cicero, *De Senectute*, *De Amicitia*, *Selected Letters*; Horace, *Odes*. Each half-year, 3 hours.
2. Horace, Selections from the *Epistles* and *Satires*; Tacitus, *Germania* and *Agricola*; Terence, *Phormio*; Plautus, *Captivi*; Pliny, *Selected Letters*. Each half-year, 3 hours.
3. *Drama*.—Selected plays of Plautus and Terence; history and characteristics of the Roman Drama. One-half year, 3 hours.
4. *Catullus and the Elegiac Poets*.—One-half year, 3 hours.
5. *Satire*.—History and characteristics of Roman Satire. Selections from Horace, Persius, Juvenal. Parallel readings in English literature. One-half year, 3 hours.

6. *Prose Literature of the Empire*.—Gudeman's Selections. Each half-year, 3 hours.
7. *Vergil. The Æneid*, Books VII.-XII.; the *Bucolics*; and selections from the *Georgics*. One-half year, 3 hours.
8. *A Course Designed for Teachers*.—Selections from Cæsar and Cicero; composition; careful grammatical study. One-half year, 3 hours.
9. *A Course in Mythology*.—Lectures, occasionally illustrated, and collateral readings. One-half year, 3 hours.
10. *Roman Life*.—Prerequisites, Latin 1 and 2; open to Juniors and Seniors. One-half year, 3 hours.

NOTE.—For a course in Roman History, see History 8; for the classical epic in translation, see English 2.

ENGLISH.

PROFESSOR PARSONS.

4. †*American Literature*.—Irving, Cooper, Poe, Bryant, Hawthorne, Longfellow, Emerson, Lowell, Holmes, Whittier. Second half-year, 3 hours. Given in 1914-'15 and alternate years.
9. †*The English Drama: Shakespeare*.—The principal plays read chronologically. Second half-year, 3 hours. Given in 1913-'14 and alternate years.
11. *Milton*.—Poetry and Prose. First half-year, 3 hours. Given in 1915-'16 and alternate years.
12. **English Poetry from Dryden to Burns*.—First half-year, 3 hours. Given in 1914-'15 and alternate years.

PROFESSORS MOTTEN, NOYES, AND WOODBRIDGE. §

1. *Rhetoric and Composition*.—Elementary Course. Required of all Freshmen. Each half-year, 3 hours.
26. †*Exposition*.—Weekly themes. Supplementary Reading. First half-year, 3 hours.
27. †*Argument*.—Weekly themes. Supplementary Reading. First half-year, 3 hours.

§In 1913-'14 Professor Woodbridge's work has been taken by Miss Helen O. Mahin.

†Course 4 or Course 5 or Course 9, and Course 26 or Course 27, one half-year, 3 hours each, required of all Sophomores. The first three courses are open to Freshmen.

PROFESSOR MOTTEN.

2. *The Classical Epic* (in translation).—Lang, Leaf, and Myers's *Iliad*, Palmer's *Odyssey*, and Theodore C. Williams's *Æneid* are read entire. Occasional themes. First half-year, 3 hours. Given in 1915-'16 and alternate years.
5. †*Outline History of English Literature*.—First half-year, 3 hours. Given in 1914-'15 and alternate years.
- 13.**Wordsworth, Coleridge, Byron, Shelley, Keats*.—Second half-year, 3 hours. Given in 1914-'15 and alternate years.
- 14.**Tennyson*.—First half-year, 3 hours.
- 15.**Browning*.—Prerequisite, Course 14. Second half-year, 3 hours.
- 17.**Poetics*.—A special study of the lyric. Second half-year, 3 hours. Given in 1913-'14 and alternate years.
- 25.**Teachers' Course*.—A study of the classics taught in the grades and high school. Instruction as to methods, texts, references. Practice teaching. Second half-year, 3 hours.
- 28.**Browning*. Advanced course. Prerequisite Course 15. The Ring and the Book and the dramas. First half-year, 2 hours. Given in 1915-'16 and alternate years.

PROFESSOR NOYES OR PROFESSOR WOODBRIDGE.

23. *Old English*.—The beginnings of English Literature. Reading is begun at once and the study is made as literary in character as possible. First half-year, 3 hours. Given in 1914-'15 and alternate years.
24. *Old English*.—*Beowulf*. Prerequisite, Course 23. Second half-year, 3 hours. Given in 1914-'15 and alternate years.

PROFESSOR NOYES.

6. *Chaucer*.—The principal poems read critically in class. Life and thought of the times. First half-year, 3 hours.
19. *Nineteenth Century Novelists*.—Jane Austen, Scott, Dickens, Thackeray, George Eliot, Stevenson, Hawthorne, and several novels selected from recent fiction. Themes. Each half-year, 3 hours. Not open to Freshmen. Given in 1914-'15.
20. *Greek Drama for English Readers*. Literary study of twelve or more dramas of Æschylus, Sophocles, and Euripides, in poetic translation; lectures on the Greek Theater and on Greek Art. Second half-year, 3 hours. Open to Freshmen only in case they have had Latin 9 or English 2. Given in 1913-'14.

*Not open to Freshmen or Sophomores.

†Course 4 or Course 5 or Course 9 required of Sophomores; open to Freshmen.

29. *Representative Essays in Modern Thought*. Not open to Freshmen. Essays by Arnold, Huxley, Mill, James, Morley, Mallock, Tyndall, Dole, Hadley, Harrison, Morris, Wallace or others. Themes as appointed. Given in 1913-'14.

PROFESSOR WOODBRIDGE.

During 1913-'14 Professor Woodbridge has been absent as exchange professor at Harvard University, and his work has been taken by Miss Helen O. Mahin.

3. *Advanced Composition*.—Prerequisite, Course 26 or 27. Second half-year, 2 class exercises, credit 3 hours. MISS MAHIN.
7. **The English Drama: Through Marlowe*.—Principles and development. First half-year, 3 hours. Given in 1914-'15 and alternate years.
8. **The English Drama. From 1590 to 1642, exclusive of Shakespeare*. Second half-year, 3 hours. Given in 1914-'15 and alternate years.
10. *Shakespeare*.—A careful study of the language of three or four plays. Second half-year, 3 hours.
16. **Eighteenth Century Prose*.—First half-year, 3 hours. Given in 1915-'16 and alternate years. MISS MAHIN.
17. **Nineteenth Century Prose*.—J. S. Mill, Carlyle, Newman, Arnold, Ruskin, Pater. Second half-year, 3 hours. Given in 1915-'16 and alternate years.
21. **Introduction to Literary Criticism*.—Reading and discussion of about forty nineteenth century essays, chosen to represent the most important types of criticism. First half-year, 3 hours. Given in 1914-'15 and alternate years.
22. **Outline of Literary Criticism*.—A survey of critical standards from Aristotle to Sainte-Beuve. Second half-year, 3 hours. Given in 1914-'15 and alternate years.
30. *Journalism*.—News gathering, news writing, and news editing; practical field work, analysis of the news of the day, and weekly stories. Second half-year, 2 hours. MISS MAHIN.

BIBLICAL HISTORY AND LITERATURE.

PROFESSOR PARSONS.

3. *Old Testament History and Literature through the United Kingdom*.—First half-year, 1 hour. Given in 1914-'15.

*Not open to Freshmen or Sophomores.

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4. *Old Testament History and Literature—The Prophets.*—Second half-year, 1 hour. Given in 1914-'15.
 16. *Hebrew Poetry.*—First half-year, 1 hour. Given in 1914-'15.
 6. *The Apostolic Age—History and Literature.*—Second half-year, 1 hour. Given in 1914-'15.
 12. *The Life of Jesus.*—Each half year, 1 hour. Given in 1915-'16.
 11. *The Social Teaching of Jesus.*—First half-year, 1 hour. Given in 1915-'16.
 15. *Present Day Religious Problems.*—Second half-year, 1 hour. Given in 1915-'16.
 13. *Bible Normal Course.*—PRESIDENT SLOCUM. Second half-year, 1 hour.
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NOTE.—For a course in New Testament Greek, see Greek 8.

PUBLIC SPEAKING.†*

ASSISTANT PROFESSOR PARK.

1. *Declamations.*—Oral interpretations, declamations, dramatic reading; individual training. Each half-year, 1 hour.
 2. *Orations and Speeches.*—Oral interpretation, discussions, orations, extemporaneous speeches, addresses; individual training. Second half-year, 2 hours.
 3. *Debates.*—Lectures; argumentations, debates on social, economic, historical and political questions. First half-year, 2 hours.
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†See Oratorical and Debating Contests, p. 115.

*Additional courses will be announced in September.

GERMAN LANGUAGE AND LITERATURE.

PROFESSOR HOWE, ASSISTANT PROFESSOR SAHM.

1. *Elementary Course.*—Grammar, Reading, Composition, Conversation. Anderson's *Märchen*; *Immensee*; *Germelshausen*. Each half-year, 3 hours.
2. *Intermediate Course.*—Two divisions. Prerequisite, Course 1. (a) *Wilhelm Tell*, *Minna von Barnhelm*, *Die Jungfrau von Orleans*. Composition. (b) Selected texts in poetry and prose with instruction by the "direct method." Each half-year, 3 hours.
3. *Scientific German.*—Prerequisite, Course 1. For Engineering and Forestry students. Each half-year, 2 hours.

4. *Composition and Conversation*.—Prerequisite, Course 2. First half-year, 2 hours.
5. *Advanced Composition and Conversation*.—Prerequisite, Course 4. Second half-year, 2 hours.
6. *German Lyrics and Ballads*.—Prerequisite, Course 2. First half-year, 2 hours.
7. *Lessing*.—Prerequisite, Course 4 or 6. *Emilia Galotti, Nathan der Weise; biographical sketch*. Second half-year, 2 hours.

ADVANCED COURSES.

8. *Schiller*.—Prerequisite, Course 5. *Don Carlos, Wallenstein, Die Braut von Messina, Maria Stuart, Die Jungfrau von Orleans, Wilhelm Tell, Schillers Briefe (Auswahl), Philosophische Schriften (Auswahl), Aus deutschen Lesebüchern V. 2 and 3, Poems; biography of Schiller*. Conducted in German. Each half-year, 2 hours. Given in 1913-'14 and alternate years.
9. *Goethe*.—Prerequisite, Course 5. *Die Laune des Verliebten, Die Mitschuldigen, Götz von Berlichingen, Die Leiden des jungen Werthers, Clavigo, Stella, Egmont, Iphigenie auf Tauris, Torquato Tasso, Herrmann und Dorothea, Faust; Gedichte (Auswahl), Briefe (Auswahl), Italienische Reise (Rom); Aus deutschen Lesebüchern V. 1; Bielschowsky's Goethe*. Conducted in German. Each half-year, 2 hours. Given in 1914-'15 and alternate years.
10. *Standard Prose Works of the Nineteenth Century*.—Prerequisite, Course 5. The purpose of the course is to acquaint the student, as far as possible, with works of literature read by educated Germans. A large number of works will be read out of class without translation, and reports and criticisms written in German will be read in class. Conducted in German. Each half-year, 2 hours. Given in 1914-'15 and alternate years.
11. *The German Drama of the Nineteenth Century*.—Prerequisite, Course 5. The works will be read and discussed as in Course 10. Kleist, Grillparzer, Hebbel, Ludwig; Gutzkow, Wildenbruch, Fulda; Sudermann, Hauptmann. Lectures in German. Especial attention will be given to the works of Kleist, Grillparzer and Hebbel. Conducted in German. Each half-year, 2 hours. Given in 1915-'16 and alternate years.
12. *Teachers' Course*.—Prerequisite, Course 5 and at least one advanced course. A study of German pronunciation and grammar from the standpoint of the teacher. Instruction as to methods, texts, and works of reference. Each half-year, 1 hour.

13. *Current German Literature*.—Required of students who major in German. Each half-year, 1 hour.

NOTE.—Any of the advanced courses may be taken by candidates for the Master's Degree, but in every case a greater amount of work will be required of such candidates than of undergraduate students.

FRENCH LANGUAGE AND LITERATURE.

MR. JAMESON AND MR. DUPERTUIS.

1. *Elementary Course*.—Fraser and Squair's *French Grammar*; Aldrich and Foster's *French Reader*; George Sand, *la Mare au diable*; Labiche et Martin, *le Voyage de M. Perrichon*. Writing from dictation, and practice in speaking. Two or three divisions. Each half-year, 3 hours.

PROFESSOR HILLS AND MR. JAMESON.

2. *Intermediate Course*.—Syntax and prose composition; *French Daily Life*; and the reading of the following works: Alfred de Musset, *Pierre et Camille*; Anatole France, *le Livre de mon ami*; Maupassant, *Contes*; Moliere, *le Bourgeois gentil-homme*; Bowen's *French Lyrics*. Lectures. Two divisions. Each half-year, 3 hours.

For outside reading: About, *le Roi des montagnes*; Balzac, *Ursule Mirouet*, *le Père Goriot*, *Eugénie Grandet*; Coppée, *Pour la couronne*; Daudet, *le Petit Chose*, *Tartarin de Tarascon*, *Tartarin sur les Alpes*; Dumas, *les Trois mousquetaires*, *la Tulipe noire*; Erckmann-Chatrian, *le Conscrit de 1813*, *Waterloo*; Feuillet, *le Roman d'un jeune homme pauvre*; Gréville, *Dosia*; Victor Hugo, *Notre Dame de Paris*; Maeterlinck, *la Vie des abeilles*; Malot, *Sans famille*; Mérimée, *Colomba*; Ohnet, *le Maître de forge*; Saintine, *Picciola*; George Sand, *François le champi*, *les Maîtres sonneurs*. Nanon; Souvestre, *Un philosophe sous les toits*; Verne, *Tour du monde en 80 jours*, *Vingt mille lieues sous les mers*; Vigny, *la Canne de jonc*, *Cinq-mars*. Each student is expected to read two of these works out of class, and pass examination upon them. Other standard works, if approved by the instructor, may be read in the place of those given in the list.

MR. DUPERTUIS.

7. *Phonetics and Conversation*.—The class will meet twice a week, and work to be prepared will be assigned. Each half-year, 1 hour.

MR. JAMESON.

3. *Nineteenth Century Literature*.—The following works will be read in class: Victor Hugo, *Hernani*, *Poésies (extraits)*; Lamartine, *Méditations (extraits)*; Alfred de Musset, *On ne badine pas avec l'amour*, *Poésies (extraits)*; selected dramas and selections from prose fiction; Sainte-Beuve, *Selected Essays*; Lectures and Reading of Saintsbury's *Primer of French Literature*. Each half-year, 2 hours. Given in 1914-'15 and alternate years.

Outside Reading.—Each student is expected to read four of the following groups out of class, and pass examination upon them:

(1) Mme. de La Fayette, *la Princesse de Clèves*, and Saint-Pierre, *Paul et Virginie*; (2) Chateaubriand, *Attala* and *René*; (3) Lamartine, *Graziella*; (4) Victor Hugo, *les Misérables (extraits)*, or *Notre Dame de Paris*; (5) Balzac, *Ursule Mirouet*, or *Eugénie Grandet*; (6) George Sand, *François le champi* or *les Maîtres sonneurs*; (7) Anatole France, *le Crime de Sylvestre Bonnard*; (8) Pierre Loti, *le Pêcheur d'Islande*; (9) Maeterlinck, *les Aveugles*, *l'Intérieur*, and *l'Oiseau bleu*; (10) Rostand, *Cyrano de Bergerac*, or *Chantecler*.

4. *Classical French Literature*.—Prerequisites, Courses 1 and 2. The following works will be read in class: Warren's *French Prose of the XVII Century*; Corneille, *le Cid*, *Horace*; Racine, *Andromaque*, *Athalie*; Molière, *l'Avare*, *les Femmes savantes*; La Fontaine, *Fables*; Boileau, *l'art poétique*; Lectures and reading of Saintsbury's *Primer of French Literature*. Each half-year, 2 hours. Given in 1915-'16 and alternate years.

Outside Reading.—Each student is expected to read several plays of Corneille, Racine, and Molière out of class, and pass examination upon them.

6. *Advanced Prose Composition*.—Each half-year, 2 hours.

PROFESSOR HILLS.

5. *Advanced Course in French Drama and Fiction*.—Prerequisites, Courses 1, 2, 3, and 4. The members of this class will meet individually with the instructor. To each student will be assigned the more important works and the biographies of three or more writers. Written reports will be required. Not less than 5,000 pages will be read. In addition to the 5,000 pages of French, the student must read some good history of France, and parts of works of literary criticism. The student is expected to have Lanson's *Littérature Française*, and the Littré-Beaujean all-French dictionary. The final

examination will cover not only the works read, but also the student's ability to read French with ease and accuracy. Each half-year, 2 hours. Students desiring this course must consult the instructor.

9. *The Comedies of Molière*.—Each half-year, 2 hours. Given in 1915-'16 and alternate years.
10. *French Drama*.—From the beginning of the nineteenth century to the present day. Each half-year, 2 hours. Given in 1914-'15 and alternate years.
8. *Old French*.—Clédat's edition of the *Chanson de Roland*. Each half-year, 1 hour. Open only to Juniors, Seniors, and graduates, who have had Latin, and French, 1, 2, and 3 or 4. Given in 1914-'15 and alternate years.

SPANISH LANGUAGE AND LITERATURE.

MR. JAMESON.

1. *Elementary Course*.—Hills and Ford's *Spanish Grammar*; Hills' *Spanish Tales for Beginners*; Alarcón, *El capitán Veneno*. Writing from dictation, and practice in speaking. Each half-year, 3 hours. Three divisions. Students may not elect Spanish 1 and Italian 1 in the same year.

PROFESSOR HILLS.

2. *Intermediate*—Syntax and prose composition; *Spanish Daily Life*; and the reading of the following works: Hills and Reinhardt's *Spanish Short Stories*; Moratín, *El sí de las niñas*; Hills and Morley's *Spanish Lyrics*. Lectures. Each half-year, 3 hours.

For outside reading: Alarcón, *El escándalo*, *El niño de la bola*, *El sombrero de tres picos*; Blasco Ibañez, *La barraca*; "Caballero," *La gaviota*, *La familia de Alvareda*; Isaacs, *María*; Palacio Valdés, *La aldea perdida*, *La alegría del capitán Ribot*; Pardo Bazán, *De mi tierra*, *Pascual López*; Pereda, *Don Gonzalo González*, *Pedro Sánchez*; Pérez Galdós, *Doña Perfecta*, *Marianela*, *Gloria* (2 vols.); Juan Valera, *Doña Luz*, *Pepita Jiménez*, *El comendador Mendoza*. Each student is expected to read two of these works out of class, and pass examination upon them. Other standard works, if approved by the instructor, may be read in the place of those given in this list.

4. *Advanced Course in Spanish Drama and Fiction*.—Prerequisites, Spanish 1, 2, 7 and 8. The members of this class will meet individually with the instructor. Not less than 4,000 words will be read. In addition to the 4,000 pages of Span-

ish, the student must read Martin Hume's *The Spanish People*, and parts of works of literary criticism. The student is expected to have Fitzmaurice-Kelly's *Spanish Literature*, and an all-Spanish dictionary (the *Campano Ilustrado* will suffice.) Written reports will be required. The final examination will cover not only the works read, but also the student's ability to read Spanish with ease and accuracy. Each half-year, 2 hours. Students desiring this course must consult the instructor.

7. *Spanish Literature of the Nineteenth Century*.—Each half-year, 2 hours. Given in 1915-'16 and alternate years.
8. *Spanish Literature of the Siglo de Oro*.—Each half-year, 2 hours. Given in 1914-'15 and alternate years.
9. *Old Spanish*.—Menéndez Pidal's edition of the *Cantar del mio Cid*. Each half-year, 1 hour. Open only to Juniors, Seniors, and graduates, who have had Latin and French, and Spanish 1 and 2. Given in 1915-'16 and alternate years.

ITALIAN LANGUAGE AND LITERATURE.

PROFESSOR HILLS.

1. *Elementary Course*.—Marinoni's *Italian Grammar*; Bowen's *Italian Reader*; De Amicis, *Cuore*. Each half-year, 2 hours. Given in 1915-'16 and alternate years. Students may not elect Italian 1 and Spanish 1 in the same year.
2. *Italian Literature*.—Dante's *Divine Comedy*. Lectures and collateral reading. Students are expected to have a copy of each of the following works: Grandgent's edition of the *Divina Commedia*; Gardner's *Dante in The Temple Primers* series; Garnett's *History of Italian Literature*; and Edgren's *Italian-English Dictionary*. Each half-year, 3 hours. Given in 1914-'15 and alternate years.

THE HISTORY OF ART.

ASSISTANT PROFESSOR SAHM.

1. **Ancient Art*.—A study of the architecture, sculpture, and painting of Egypt, Assyria, Persia, Greece, Etruria, and Rome. Special stress will be laid on Greek art and its perfect expression of Greek ideals. Recitations and lectures. First half-year, 2 hours.

*Not open to Freshmen, and to Sophomores only by special permission.

2. **Mediaeval and Renaissance Art*.—Prerequisite, Course 1. Outline study of the Early Christian, Byzantine, Romanesque, and Gothic periods in Italy, France, and England. The most important work will be an appreciative study of the Renaissance in Italy. Recitations and lectures. Second half-year, 2 hours.
3. **The Art of Flanders and Holland*.—Prerequisites, Courses 1 and 2. Flemish Painting from Van Eyck to Rubens and Van Dyck. The great Dutch painters of the 17th Century. Development of Portrait and Landscape Painting. Marine and Genre Painting. First-half, 1 hour. Given in 1914-'15 and alternate years.
4. **The Art of Spain and France*.—Prerequisites, Courses 1 and 2. Development of Spanish Painting under Italian and Flemish Influences, Velasquez and the Castilian School. Murillo and the Andalusian School. Survey of French Painting from the Early Renaissance through 17th Century Classic Art. Second half-year, 1 hour. Given in 1914-'15 and alternate years.
5. **German and English Art*.—Prerequisites, Courses 1 and 2. The Great German Painters of the 15th and 16th Century. The Portrait Artists of England in the 18th Century. Later English Art. The Pre-Raphaelite Brotherhood. First half-year, 1 hour. Given in 1915-'16 and alternate years.
6. **Movements in 19th Century Art*.—Prerequisites, Courses 1 and 2. Summary and criticism of Modern Painting. Romanticism versus Classicism in French Art. The Barbizon School of Painters. Impressionism. Contemporary Painting in Germany and Holland. Brief Review of American Art. Second half-year, 1 hour. Given in 1915-'16 and alternate years.

*Not open to Freshmen, and to Sophomores only by special permission.

HISTORY.

ASSISTANT PROFESSOR JENKINS.

Three groups of historical courses are offered:

I. *Anglo-American Group*.—Students who expect to major in this field must take History 1. History 2, and History 3, open to Freshmen and Sophomores, and to other students as electives; History 12, and History 9, open only to Juniors and Seniors; Political Science 2 and Political Science 3. The remaining hours may be filled from the other courses offered by the department, or Economics 6, or Education 1 and 2.

II. *Mediaeval and Modern European History*.—Students who expect to major in this field must take History 1 and History 3, open to Freshmen and Sophomores, and to other students as electives; and History 10, History 4, History 5, Political Science 3 and 4, and History 9, open only to Juniors and Seniors.

III. *Ancient History*.—These courses are intended to meet the needs of students of the classics, or those primarily interested in the ancient world. The courses offered are History 7, History 8, History of Art, Roman Life, and Mythology.

1. *Modern European History*.—Text, Robinson and Beard's *Development of Modern Europe*. Open to Freshmen, required of Sophomores who have not already taken it. Prerequisite to all other courses in the department except History 2 and History 3. Each half-year, 2 hours.
2. *American History*.—The main lines of development, from the planting of the colonies to the present time. Text, Elson's *History of the United States*. Each half-year, 2 hours. Given in 1913-'14 and alternate years. For related courses see Economics 6 and Political Science 2.
3. *English History*.—A survey from the earliest times. Text, Gardiner's *Student's History of England*. Constitutional and social evolution will be particularly noticed. Each half-year, 2 hours. Given in 1914-'15 and alternate years.
4. *The French Revolution and the Napoleonic Era*.—The political, social, and economic history of the period, with attention to prominent individuals, the conflict of ideas, and the more permanent reforms throughout western Europe. First half-year, 2 hours. Given in 1913-'14 and alternate years.
7. *Greek History*.—An outline of political history, with attention also to social, economic, intellectual, and military development, and the contribution of the Greeks to later civilization. Text, Bottsford's *History of Greece*. First half-year, 2 hours. Given in 1913-'14 and alternate years.
8. *Roman History*.—Special emphasis will be laid on the history and culture of the late Republic and early Empire. Second half-year, 2 hours. Given in 1913-'14 and alternate years.
10. *Mediaeval History from the 4th to the 16th Century, A. D.*.—Emphasis on cultural and social conditions, and on the origin and development of institutions and ideas. Each half-year, 3 hours. Given in 1914-'15 and alternate years.
12. *Advanced Course in American History*.—Prerequisite, History 2. Each half-year, 2 hours. Given in 1914-'15 and alternate years.

5. *Social Progress in Contemporary Europe*.—Text by Ogg. Prerequisite, History 1 and 3. Second half-year, 2 hours. Given in 1913-'14 and alternate years.
9. An intensive study of a narrow field in history. The particular period of topic will be announced at the opening of the college year, and may frequently be arranged to meet the special interests of the students. Required of students who select history as a major study. 1 hour.
13. *History Club*.—Current Events. Regular readings from the periodicals with reports, and one carefully prepared paper on some topic of contemporary interest. Open only to those who have had two years of college work in history.

POLITICAL SCIENCE.

ASSISTANT PROFESSOR JENKINS.

2. *American Government*.—The historical foundations; the present-day organization and working of national state, and local government. This course, or Economics 1 required of all Juniors. Prerequisite, History 2. Second half-year, 2 hours. Given in 1913-'14 and alternate years.
3. *English Government*.—The course will relate largely to the present structure and working of the government of the United Kingdom, but with some attention to colonial problems. Prerequisite, History 3. First half-year, 2 hours. Given in 1914-'15 and alternate years. Text, Marriott's *English Institutions*.
4. *European Governments*.—A study of contemporary government in France, Germany, Austria-Hungary, and Switzerland, with a brief account of the government of other European states. Prerequisite, History 1. Second half-year, 2 hours. Given in 1914-'15 and alternate years. Text, Ogg's *Governments of Europe*.

ECONOMICS.

PROFESSOR PERSONS AND ASSISTANTS.

1. *Principles of Economics*.—This course, or Political Science 2, required of all Juniors. A general survey based upon the study and discussion of a text-book giving the currently accepted scientific analysis of industrial society, supplemented by lectures and assigned readings. The purpose of the course is to teach fundamental principles, to open the field of economics in the way most helpful to further more detailed

study of special problems, and to give to those who intend to adopt business, law, or journalism, the general rules and principles contributed to business by the science of economics. First half-year, 3 hours.

2. **Advanced Economic Theory.*—A study of the history of economic thought since the time of Adam Smith, with special reference to the economic conditions which influenced those theories. The latter part of the course will be devoted to an examination of modern theories of distribution. First half-year, 2 hours. Given in 1915-'16 and alternate years.
5. *General Economic History.*—Origins of economic institutions and their development up to modern times. Ancient, mediaeval and modern forms of industrial organization, with special reference to systems of land tenure, of labor, the evolution of capital, the manors, the guilds, and the industrial revolution. Emphasis on English and American History. First half-year, 2 hours. Given in 1914-'15 and alternate years.
- 17.*—*Economic Problems.*—A course in current economic problems designed to supplement Econ. 1 and to apply to the principles therein developed. The causes and effects of monopolistic consolidations; the policies of monopoly as they affect investors, laborers, and consumers; the progress of legislative control. Transportation problems; the railway as a public highway; government control; municipal utilities; methods of dealing with them. Labor problems; strikes; trade unions; collective bargaining; factory legislation, and child labor. Those economic problems will be especially emphasized which are questions of the day. Students expecting to do advance work in economics should elect this course. Lectures, assigned readings, and discussions. Second half-year, 3 hours.
9. **Money and Banking.*—The history and theory of money, credit, and banking. The evolution of metallic currency; the position of the bimetallicists and the quantity theorists; credit, credit instruments, paper money, convertible and inconvertible notes, modern currency problems, and foreign banking systems are studied with special reference to American currency and banking. Students electing this course should also elect Economics 20. First half-year, 2 hours. Given in 1915-'16 and alternate years.

*Prerequisite, Economics 1.

- 20.**Current Financial Topics*.—A weekly discussion of current topics and statistics relating to money, banking, domestic and foreign commerce and exchange, price movements, etc. Students will be expected to subscribe to a standard trade journal. This course is open only to those students who have taken Economics 9 or who elect it with the present course. First half-year, 1 hour. Given in 1915-'16 and alternate years.
- 10.**Public Finance*.—A survey of the whole field of public finance, including (a) public revenues, their nature, classification, and characteristics, with special emphasis on taxation; (b) public expenditures, their classification, and relation to public welfare and to governmental functions; (c) the budget and its preparation in the great countries of the world; (d) public credit, its nature, employment, industrial effects, and administration. Second half-year, 2 hours. Given in 1914-'15 and alternate years.
- 18.**Statistics*.—The history, theory and methods of statistics. The making of schedules; the collection and tabulation of data; averages; graphic representation; frequency tables and curves; correlation; interpolation, etc. Each half-year, 3 hours. Given in 1914-'15 and alternate years.
- 19.**Insurance*.—The theory of insurance; the development of insurance companies; the various systems of insurance; company management. The mathematics of compound interest, including annuities certain. The theory of probabilities as applied to the construction of mortality tables; the computation of reserve, surplus, premiums, endowments, dividends, etc., for life insurance. Second half-year, 3 hours. Given in 1915-'16 and alternate years.
- 16.**Senior Seminary*.—Each student who takes his major in Economics, History, and Political Science, is required, in his Senior year, to prepare a thesis on a subject approved by the instructor. The thesis must be handed in not later than May 15. It must be typewritten and bound and, when accepted by the instructor, becomes the property of the College. While preparing the thesis, the student is required to meet the instructor at least once every week to report on work done and to discuss theory, bibliography, etc. Each half year, 1 hour.

*Prerequisite, Economics 1.

SOCIOLOGY.

PROFESSOR PERSONS AND ASSISTANTS.

1. *—*Principles of Sociology*.—In this course an attempt is made to formulate the fundamental laws of association, with special reference to their relation to social progress. Such topics as the influence of the physical environment, natural selection, warfare, division of labor, sex and sexual selection, heredity, imitation, social oppositions, art, science and religion, will be discussed with reference to their effects on social progress. First half-year, 2 hours.
3. **Socialism*.—Proposals for the reorganization of society on a socialistic basis will be studied historically and critically. Writings of the early French and English socialists will be reviewed, but the major part of the course will be devoted to the study of German scientific socialism. Second half-year, 2 hours. Given in 1915-'16 and alternate years.
4. **Problems in Sociology*.—A study of particular social problems, including suicide, the liquor problem, divorce, immigration, poverty, crime, etc. Second half-year, 2 hours. Given in 1914-'15 and alternate years.

*Prerequisite, Economics 1.

LAW.

MR. HURLEY AND MR. CARRUTHERS.

The courses in Law have been arranged to meet the wants not only of students who expect to complete a professional law course, but also of those who, though not intending to practice law, nevertheless desire a thorough foundation in the general principles on which Anglo-Saxon jurisprudence is based.

1. *Elementary Law*.—The elementary principles and doctrines of the law exhibiting them in their logical and practical connections with each other. The student is thus acquainted with the general nature and scope of the law as a science, which those who further pursue their legal studies are to master in detail. Text-book and lectures. Robinson's *Elementary Law*. First half-year, 3 hours.
3. *Contracts*.—Mutual assent and the necessity of its communication; offers and their expiration or revocation; necessity of consideration; requisites of contracts under seal; rights of beneficiaries and assignees; joint and several contracts; alter-

native contracts; conditional contracts; illegality; impossibility; duress; discharge of contracts, or causes of action arising under them by recession, novation, accord and satisfaction, release and other means. Texts: Anson on *Contracts*, Longwell and Williston's *Cases on Contracts*. Each half-year, 2 hours.

One, sometimes two, of the following courses are given each year, the choice being determined by the wish and degree of preparation of the classes.

2. *American Constitutional Law*.—The general principles of constitutional law of the United States, their interpretation and practical application; the origin and development of the Constitution of the United States. Text-book, illustrative cases, and lectures. Cooley's *Principles of Constitutional Law*. Second half-year, 3 hours.
4. *Torts*.—The nature of torts; historical development; principles of liability; limitation of personal capacity; effect of a party's death; liability for the torts of agents and servants; general exceptions, inevitable accident, leave and license, necessity and self-defense; remedies; assault and battery; imprisonment; the family and business relation; defamation; wrongs of fraud and malice; wrongs to possession of property; trespass, waste, conversion, justification and excuse; nuisance; negligence, contributory negligence; special relations of contract and torts. Texts: Webb's *Pollock on Torts*, Ames and Smith's *Cases on Torts*. Each half-year, 2 hours.
5. *Domestic Relations and the Law of Persons*.—Infancy: period of infancy; voidable acts, disaffirmance, ratification; contracts for necessities; obligations created or authorized by law; liability for tort; guardian and ward. Marriage: promise to marry; marriage contract at common law and under statutes; rights of husband and wife in each other's property; status of married women; transactions between husband and wife; torts affecting marital relations; separation; divorce. Parent and child; custody, service, and earnings. Texts: Tiffany on *Domestic Relations*, Woodruff's *Cases on Domestic Relations*. Each half-year, 2 hours.
6. *Property*.—Real and personal property; ownership of land; natural servitudes; easements; covenants as to use; public rights; franchises; rents and tenures; uses and trusts; joint ownership; estates; remainders and executory limitations; common law assurances and conveyances under the Statute of Uses. Texts: 207 to 508, Chase's *Blackstone*; Gray's *Cases on Property*. Each half-year, 2 hours.

7. *Mining Law*.—The mining laws of foreign countries; the policy of the United States, the Federal legislation concerning mineral lands; lands in the United States subject to appropriation under the mining laws, and the persons who may acquire rights therein; state legislation and local district regulations supplementing the Federal laws; the vein, apex, dip; the discovery, location and record of lode and placer claims; tunnel claims; coal lands, salines, mill sites; the nature and extent of property rights acquired by lode and placer locations; cross lodes, the extra-lateral right, known lodes; annual labor, abandonment, forfeiture, resumption of work, relocation; proceedings to obtain U. S. Patent, the adverse claim, action to determine adverse claims, the patent; actions and remedies; rights and obligations arising out of agreement between the parties. Texts: Costigan on Mining Law and selected cases. Each half-year, 1 hour.
8. *Negotiable instruments*.—General characteristics and general form of bills, notes, and checks. The Law Merchant. Parties and their capacity. Formal and essential requisites. Consideration of negotiable instruments. Negotiability, by indorsement, transfer, and assignment. Liabilities and rights of parties. Real, or absolute defenses. Personal defenses, or equities. Discharge of negotiable instruments. Suretyship and guaranty. Textbook: Ogden's *Negotiable Instruments*. Selected cases, and the Negotiable Instruments Act. Second half-year, 1 hour.

BUSINESS ADMINISTRATION AND BANKING.

PROFESSOR PERSONS AND ASSISTANTS.

1. *The Elements of Accounting*.—Business forms, methods, and documents such as drafts, notes, bills of lading, etc. Double-entry drills, modern forms of accounting and practice in the use of essential books, and in treating and properly stating partnership accounts. Two laboratory periods of two hours each and one recitation per week. First half-year, 3 hours.
2. *The Theory and Practice of Accounting*.—Corporation accounts, analysis of classified statements, manufacturing and trading accounts, cost accounting. Problems in accounting procedure. Two laboratory periods of two hours each and one recitation per week. Second half-year, 3 hours.
3. *Commercial Geography*.—After a survey of the development and status of foreign industries, natural resources and the expansion of commerce, a special study is made of the principal

articles which enter into American commerce. Resources, industries, and trade currents are treated. First half-year, 3 hours.

4. *Corporation Finance and Industrial Organization*.—Historical development and analysis of the different forms of industrial organization, including the partnership, joint-stock company, and the corporation, and the later developments, such as the pool, trust, combination, and holding company. Critical discussion of the advantages and disadvantages of recent forms of business organization illustrated by documents. Elements of corporation finance, with special reference to organization and management. The evils of corporate organization, such as fraudulent promotion, over-capitalization, and manipulation. Public policy toward corporations, with special reference to taxation. Commerce clause of the Federal Constitution and its growing importance. A brief consideration of public-service corporations with special reference to municipal utilities. Second half-year, 3 hours. Given in alternate years.
5. *Commercial Law*.—An outline of the main principles of the law of contracts; agency, bailments, including the obligations of common carriers and telegraph companies; bankruptcy and insolvency; insurance; negotiable instruments; partnerships, joint-stock companies, and corporations; the acquisition and transfer of property, and sales of personal property; real property. Each half-year, 3 hours.
6. *Business Management*.—An intensive study of the principles and mechanism of organization and management, with special emphasis on the following phases the general institutions and forms of management; the determination and direction of operations; the plant, its site, construction and adaptation to the business; purchasing; the custody and treatment of stores and stock; the selection, care, and maintenance of tools and machinery; the selection, treatment, and payment of labor; selling and the organization and management of the sales force; credit and collections. Various types of business—retail, wholesale, and manufacturing—are considered, and a careful study is made of the principles of Scientific Management. Each half-year, 2 hours.
7. *Transportation*.—Steam Railways. (a) The railway problem of the United States, including theories of rates, combination and pooling, consolidation, community of ownership, and government ownership or control, involving a careful considera-

tion of the work of the Interstate Commerce Commission and of State commissions. (b) A comparative study of the railway systems of other countries, especially England, Germany, France, Canada, and the Australian Commonwealth, with a consideration of the economic significance of the world's great railway systems.

Transportation and communication other than by steam railways. (a) Lake, river, and canal transportation in the United States and other countries. (b) Ocean transportation with special reference to its relation to the transportation systems of various countries. (c) Interurban railways and their growing competitive power, telegraphs, telephones, and cables. First half-year, 2 hours. Given in alternate years.

8. *Psychology of Advertising*.—An introduction to the laws of human behavior as affected by advertising forces. Reasons for lost motion in advertising. The testing of appeals by statistical methods. Instincts, memory, association of ideas, suggestion, habit, etc., that underlie the effective appeals on responses in human behavior. (Hours to be announced.)—
PROFESSOR BREITWIESER.

9. *Banking Problems*.—Outline of the work of commercial, savings and financial banks and trust companies. The nature of investments of the different institutions. The banks of England, France, and Germany. The national reserve system and its functions. The nature of the demand for credit and currency. First half-year, 2 hours. Given in alternate years.

10. *International Banking*.—The documents used in foreign exchange. Commercial and travelers' credits. Currency movements and their causes. Parity sheets and the method of computation of parities. Description of methods used by the international banking houses of New York, London, Berlin, and Paris. Second half-year, 2 hours. Given in alternate years.

11. *Thesis*.—Each student taking the business course is required to prepare a thesis on a subject approved by the business faculty. Students are expected to select a subject pertaining to the field which they have in view. It is desirable that the subject chosen be connected with some line of activity that will require first hand investigations. One hour per week will be given to consultation with that member of the business faculty in whose field the subject lies. Each half-year, 2 hours.

MATHEMATICS.

PROFESSOR CAJORI, ASSISTANT PROFESSOR ALBRIGHT.

1. **Algebra*.—Graphs; Variation; the Binomial Theorem; Logarithms; Undetermined Coefficients; Permutations and Combinations; Theory of Limits; Series; Theory of Equations. First half-year, 3 hours.
2. **Solid and Spherical Geometry*.—Planes and Lines in Space; Polyhedra, the Cylinder, Cone and Sphere; Spherical Triangles. Second half-year, 2 hours.
3. **Plane Trigonometry*.—The functions of one and two angles; inverse functions; the solution of triangles; De Moivre's theorem; simple applications. Second half-year, 3 hours.

*Courses 1, 2, and 3 required of Freshmen.

PROFESSOR CAJORI.

4. *Analytical Geometry (Elementary)*.—Plane loci of first and second order, higher plane curves. First half-year, 3 hours.
5. *Analytical Geometry (More Advanced)*.—More thorough study of plane loci; solid analytic geometry. Second half-year, 2 hours.
6. *Calculus, Differential and Integral*.—First half-year, 3 hours. Second half-year, 4 hours.
7. *History and Logic of Mathematics*.—This course is planned especially for those who are fitting themselves to be teachers of mathematics. One half-year, 2 hours.
8. **Projective Geometry*.—One half-year, 3 hours.
9. **Theory of Equations*.—One half-year, 3 hours.
10. **Differential Equations*.—2 hours.
11. **Determinants*.—One half-year, 2 hours.
13. **Vector Analysis*.—One half-year, 3 hours.

*Of Courses 8, 9, 10, 11, and 13, only two are usually given in any one year.

ASSISTANT PROFESSOR ALBRIGHT.

12. *Theoretical Mechanics*.—Prerequisite, Course 6. This course is intended especially for students of engineering and mathematical physics. Each half-year, 3 hours.

NOTE.—For a course in Elementary Surveying, see Civil 1, p. 78.

ASTRONOMY.

ASSISTANT PROFESSOR ALBRIGHT.

1. *General Astronomy*.—Introduction and descriptive. First half-year, 3 hours. Offered in 1915-'16 and alternate years.
2. *Elementary Meteorology*.—First half-year, 3 hours. Offered in 1914-'15 and alternate years.
3. *Constellations*.—Study of the stars; chart making. Lectures and night work. Once every two weeks throughout the year, credit one hour.

NOTE.—For a course in *Field Astronomy*, see Civil 2, p. 78.

CHEMISTRY.

PROFESSOR STRIEBY.

1. *Elementary Chemistry*.—Text-book work (chiefly Inorganic Chemistry) supplemented by lectures and discussions upon the fundamental laws, the application of chemistry to sanitary science, medicine, and some of the arts, and also by occasional papers from descriptions in technical books, and by reports of visits to metallurgical and manufacturing establishments. Remsen's *College Chemistry*. Each half-year, 3 hours' recitation and 4 hours' laboratory work, credit 3 hours.
2. *Advanced Chemistry*.—This course gives a general knowledge of chemistry. The second term is devoted mainly to Organic Chemistry. The chief theories and laws are studied with reference to the explanation of chemical phenomena. The practical application of chemistry in the arts, and its uses in the sanitary regulations of daily life and work, are brought prominently forward. Abstracts from books on chemical technology and sanitary science, and discussions upon recent discoveries and application of chemistry, will occasionally take the place of the usual lectures. The work in the laboratory includes short courses in Qualitative and Quantitative Analysis and the preparation of inorganic and organic compounds. Each half-year, 3 hours' lectures and 4 hours' laboratory work, credit, 3 hours.
5. *Organic Chemistry*.—Prerequisite, Chemistry 1 or 2. Remsen's *Organic Chemistry*. Recitations, lectures, and discussions of special subjects and processes. Each half-year, 3 hours' recitation and 4 hours' laboratory work, credit 3 hours.

5. *Theoretical Chemistry*.—Prerequisite, Chemistry 2. Text-book work with lectures and oral and written discussions. Each half-year, 3 hours.
7. *Medical Chemistry*.—Prerequisite, Chemistry 2. Lectures, text-book, assigned reading and laboratory work. The study is mainly of substances, inorganic and organic, that are of importance, in medical science and hygiene. Special attention is devoted to the examination of carbohydrates, proteins, fats, blood, milk, urine, and digestive agents. The needful gravimetric determinations, considerable volumetric work with burettes and standard solutions, and microscopic and spectroscopic tests, supplement the usual qualitative examinations. Hawk's *Physiological Chemistry*. Each half-year, 4 hours recitation, 8 hours laboratory work, credit 4 hours.

MR. CLARK.

3. *Qualitative Analysis*.—Prerequisite, Chemistry 2 or equivalent. Experimental drill in obtaining characteristic reactions of the more common elements, study of empirical formulae and symbolic expression of reactions, solution of substances, separation of groups of elements, and analysis of simple salts and of complex mixtures and alloys. The analytical work is confined almost wholly to inorganic substances, but includes certain common organic acids and a few organic bodies of general and medical use. First half-year, 1 hour recitation, 8 hours laboratory, credit 4 hours.*
4. *Quantitative Analysis*.—Prerequisite, Chemistry 3. The laboratory work comprises determinations of single elements by approved methods, gravimetric and volumetric, followed by the analysis of selected salts, ores, slags, fluxes, flue gas, boiler-water and commercial products. A few rapid or commercial determinations are given as the final work. The lectures treat of the methods of analysis, properties of precipitates, stoichiometry sampling, reporting, and the theory of solutions. Course one year from mid-year Sophomore year, to mid-year Junior year. First half of course, 1 hour recitation, 8 hours laboratory, credit 4 hours.* Second half of course, 1 hour recitation, 11 hours laboratory, credit 5 hours.
8. *Agricultural Chemistry*.—Prerequisite, Chemistry 2. A study of soils, fertilizers, foods, and feeding; the analysis of soils, manures, water, and dairy products. Each half-year, 1 hour recitation, 5 hours laboratory, credit 3 hours.

*A shortened course is given for Electrical Engineers; 1 hour recitation, 5 hours laboratory, credit 3 hours.

9. Assaying.—Prerequisite, Chemistry 4. Sampling and assaying of gold, silver, copper, and lead ores, mattes and bullions, and the chemistry of cyanide solutions. Lectures and laboratory practice. Second half, Junior year, laboratory three 4-hour periods and one recitation each week, credit 4 hours.

The fee for every course must be paid in advance. It covers the cost of gas, chemicals, and non-returnable supplies, except platinum. Glassware and necessary apparatus (except platinum vessels) are loaned to the student and must be returned in good condition. The fees are as follows:

Course 1.....	- 7.00
Course 2.....	8.00
Course 3 or 4, each year's work.....	15.00
Course 5 or 7.....	15.00
Course 8.....	10.00
Course 9.....	20.00

No portion of the fee can be returned to any student who drops his course later than the Christmas recess.

BIOLOGY.

PROFESSOR SCHNEIDER, MR. BAKER, MISS SMITH.

1. *General Biology*.—A general outline of the fundamental principles of Biology. Some topics considered are the origin of living matter, organization, growth and reproduction, differentiations, evolution.

(a) First half-year: *Plant Studies*.—In the laboratory a comparative study is made of the cryptogams, beginning with the simplest forms. This is followed by a study of the structure of typical flowering plants.

(b) Second half-year: *Animal Studies*.—The laboratory work involves a study of representatives of the principal groups of animals.

Recitations or lectures, 3 hours; laboratory work 4 hours; credit 3 hours.

PROFESSOR SCHNEIDER, MISS SMITH.

2. *Plant Physiology*.—Prerequisites, Biology 1, and one year of Chemistry. A laboratory and lecture course on the functions of the organs of seed plants. Emphasis is placed upon composition and nutrition of plants, and the vegetable enzymes. First half-year, 3 hours. Given in 1915-'16 and alternate years.

3. *Botany of the Seed Plants*.—Prerequisite, Biology 1, Adaptations, migration, distribution, and successions are considered at length. Opportunity is also given the student to become proficient in the determination of plant species among gymnosperms and angiosperms. Field excursions for the purpose of studying the local plant geography. Second half-year, recitations or lectures, 3 hours; field or laboratory work, 4 hours credit, 3 hours.

MISS SMITH.

4. *Plant Histology*.—Prerequisite, Biology 1. This course, in addition to a study of plant structure, affords experience in the technic of microscopic preparations. The paraffin method, the celloidin method, the freezing method, the glycerine method, and free-hand sectioning are applied. First half-year, credit 2 or 3 hours (3 hours in the laboratory counting as 1 hour.)

PROFESSOR SCHNEIDER.

5. *Bacteriology*.—Prerequisite, Biology 1. Apparatus; culture media and methods of preparation; sterilization methods; microscopic characteristics of culture, of bacteria in general and of special forms, and methods of diagnosis; methods of obtaining pure cultures; methods of staining; bacteriological investigations of water, air, and soil. Students electing this course are expected to take Biology 6. Second half-year, credit 3 or 4 hours, (3 hours in the laboratory counting as 1 hour). Given in 1914-'15 and alternate years. Open only to Juniors and Seniors.
6. *Sanitary Science and Public Health*.—A lecture course. Some of the topics discussed are: Death and its causes; classification of diseases; ancient and modern theories of disease; germ theory of infectious disease; direct causes and predisposing causes of disease; means of avoiding and resisting disease; vehicles of disease, such as dust, sewage, water, etc.; brief sketch of the important transmissible and epidemic diseases, prophylaxis, etc. Each half-year, 1 hour.
7. *Physiology and Personal Hygiene*.—Prerequisite, Biology 1. Lectures, recitations, and demonstrations dealing with the structure and activities of the human body. Emphasis is placed upon hygienic problems. Each half-year, 3 hours.
8. *Experimental Physiology*.—Prerequisites, Biology 1 and 7, and one year of Chemistry. Students are advised to elect this course with Biology 7. The experimental work covers the fol-

lowing subjects: The physiology of ciliary motion; the general physiology of muscle and nerve tissue; phenomena of circulation, with countings of the blood-corpuscles and estimation of hæmoglobin; respiratory exchanges, movements, etc.; digestion and absorption; physiology of the spinal cord and brain; of the cutaneous sensations, taste, smell, hearing, and vision. Each half-year, 3 hours in the laboratory, credit 1 hour.

9. *Physiology*.—Prerequisites, Biology 1 and Chemistry 2. This course is adapted to the needs of the student planning to study medicine. Each half-year, recitations or lectures, 3 hours; laboratory work 5 hours, credit 4 hours.
18. *Evolution*.—Prerequisite, Biology 1. The history of the theory; the evidences for descent; the theories of species-forming, with a study of statistical and experimental evidence. First half-year, 3 hours. Given in 1914-'15 and alternate years. Open to Juniors and Seniors.

MR. BAKER.

10. *Invertebrate Morphology*.—Prerequisite, Biology 1. A study is made of the advance in specialization from the Protozoa to the Arthropods. Types of the more important groups are studied in the laboratory. This course is especially recommended for those intending to teach Biology. First half-year, 6 hours, credit 3 hours.
15. *Comparative Anatomy of Vertebrates*.—Prerequisite, Biology 1. A comparative study of vertebrate structure. Dissections are made of the Amphioxus, Necturus, the shark's head, and a mammal. Second half-year, 6 hours, credit 3 hours.
11. *Histology*.—Prerequisite, Biology 1. A comparative detailed study of the tissues of the higher animals. Preparations of the principal tissues and organs are made and the common methods of preparation and mounting studied. Special microscopic drill is given in distinguishing the different tissues and organs. First half-year, 6 hours, credit 3 hours. Given in 1915-'16 and alternate years.
12. *Embryology and Cytology*.—Prerequisite, Biology 1. A study of maturation, fertilization and cleavage of the ovum, early stages of the embryology of the chick and pig. Special attention is given to the differentiation and development of tissues and organs. Students make most of their own preparations. Second half-year, 6 hours, credit 3 hours. Given in 1913-'14 and alternate years.

14. *History of Biology*.—Prerequisite, Biology 1. A study of the lives and work of the more important men who have shaped biological thought. Recitations, lectures, and assigned readings. Second half-year, 2 hours. Given in 1914-'15 and alternate years.
16. *Animal Distribution*.—Prerequisite, Biology 1. Lectures, assigned readings, and laboratory and field study. An attempt will be made, during the early portion of the half-year, to study the different local forms, both in the field and in the laboratory, and to outline the fundamental principles of Animal Ecology. After cold weather begins, the time will be spent on Zoogeography, the distribution of animals throughout the world. First half-year, lectures two hours, laboratory or field work 3 hours, credit 4 hours. Given 1914-'15 and alternate years.

LABORATORY FEES:

Course 1, 2, 10, 11, 12, 13, or 15	\$3.00
Course 3, or 16.....	1.50
Course 4, for each hour of credit.....	2.00
Course 5 or 9.....	6.00
Course 8.....	4.00

PHYSICS.

ASSISTANT PROFESSOR TILESTON.

1. *Elementary Physics*.—An introductory course requiring no mathematics beyond the requirements for entrance to college, intended to acquaint the student with the facts, the methods, and the general principles of physical science.

The lectures will be illustrated by lantern slides and by experiments of historical interest. Open to Freshmen. First half-year, 2 hours' lecture and one 4-hour laboratory period, credit 3 hours.

2. *Elementary Physics*.—This is a continuation of the preceding course. Prerequisite, Physics 1. Second half-year, credit 3 hours.
3. *General Physics*.—A study of the phenomena and laws of Mechanics, Wave Motion, and Heat. This course is designed to equip engineers with a working knowledge of the basic principles of Physics. Instruction is given by lectures, recitations (Duff: *A Text Book of Physics*), frequent examinations, and daily problem work. In addition to the lectures and laboratory a personal conference is frequently held with each student to assist in clearing up his difficulties. Prerequisites. Algebra and Plane Trigonometry. First half-year, 3 hours' lecture, credit 3 hours.

4. *General Physics*.—A continuation of Course 3, extended into the study of the laws of Electricity, Magnetism, Sound, and Light. Prerequisite, Physics 3. Second half-year, credit 3 hours.
5. *Experimental Physics*.—This course acquaints the student with the theory and use of instruments of precision, and enables him to verify and apply the physical laws learned in Course 3. First half-year, 6 hours, credit 2 hours. Courses 3 and 5 should be elected at the same time.
6. *Experimental Physics*.—The laboratory work of Physics 5 is continued, and the experiments concern the subjects of Electricity and Light. Second half-year, credit 2 hours. A briefer course with a credit of 1 hour is given for Civil Engineers.
8. *Precision of Measurements*.—The theory and use of the slide-rule, followed by a study of the nature and methods of elimination of errors in experimental work. This course is required of all students in Physics 6. Second half-year, credit 1 hour.
7. *Teachers' Course*.—A course for students expecting to teach high school physics. This course is based on the class-room and laboratory work of the other courses, with emphasis laid upon the analysis of the subject matter and of the experiments, with reference to pedagogical and scientific value, method of presentation, accuracy to be expected, etc. Prerequisites, Physics 1 and 2, or 3 and 4. Hours and credits to be arranged individually.
9. and 10.—*Theory of Light*.—This course will consist of lectures, recitations, and laboratory work. The text used will be Wood's Physical Optics, supplemented by Preston and Edser. Prerequisites, Differential and Integral Calculus, and Physics 3, 4, 5, and 6. Throughout the year. Each half-year, lectures 3 hours, credit 3 hours.

PROFESSOR THOMAS.

11. and 12.—*Elements of Electrical Engineering, and Alternating-Current Theory*.—Equivalent to Electrical Engineering 1 and 2.
13. and 14.—*Advanced Electrical Laboratory, and Direct-Current Electrical Engineering Laboratory*.—Equivalent to Electrical Engineering 3 and 8.

MR. BLAKEY.

15. and 16.—*Thermodynamics and Power Plants*.—Equivalent to Electrical Engineering 16 and 15.

NOTE.—A major in Physics may be obtained by combining credit in Mathematics with credit in Physics.

LABORATORY FEES.

Course 1 or 2.....	\$2.00
Course 5 or 6.....	3.00

GEOLOGY.

During the year 1913-'14, the work in Geology has been in charge of Mr. George A. Barker.

1. General Geology.—Prerequisite, Elementary Chemistry. Dynamical, Structural, and Historical Geology. Lectures; laboratory work Tuesday and Thursday afternoons, and field excursions on Saturday mornings. The student, while not required to do so, is advised to elect Mineralogy (Geology 2) and Zoology (Biology 1b) before taking Geology 1, or at the same time with it. Text: Chamberlin and Salisbury's *Geology*. Each half-year, 3 hours.
2. Mineralogy.—Prerequisite, Elementary Chemistry. Required for Courses 3 and 6. The economic or ore classification of minerals is used, and the time is devoted chiefly to laboratory work in Descriptive and Determinative Mineralogy. Text: Moses and Parsons's *Mineralogy, Crystallography, and Blow-pipe Analysis*. Laboratory fee, \$3.00 Uniform individual working outfits are furnished at cost. Each half-year, 6 hours, credit 3 hours.
3. *Economic Geology*.—Prerequisite, Courses 1 and 2. Lectures and required reading. The geology and mineralogy of the ore deposits of the United States (gold, silver, copper, lead, zinc, iron.) The greater part of the second half-year is devoted to the consideration of coal, building stones, and the less important non-metallic minerals. In the spring there are voluntary field excursions to mining localities. Texts: Kemp's *Ore Deposits of the United States and Canada*, Kemp's *Economic Geology of the Non-Metallic Minerals*. Each half-year, 3 hours.
4. *Invertebrate Paleontology*.—Lectures and laboratory work. Systematic study of the chief classes of the invertebrates by means of fossils, with special attention to the structure and

development of the trilobites and brachiopods. Collections are made in the field to afford training in the identification of geological horizons. First half-year, 3 hours. Given in 1914-'15 and alternate years.

5. *Vertebrate Paleontology*.—Lectures, laboratory work on the museum collections, and required reading on the main lines of mammalian descent from the Eocene to recent time. First half-year, 3 hours. Given in 1915-'16 and alternate years.
6. *Petrography*.—Prerequisite, Courses 1 and 2. Lectures and laboratory work with the microscope on the commoner rock-forming minerals and the principal rock types. Second-half-year, 3 hours.
7. *Field Geology*.—The systematic investigation in the field of 150 square miles immediately adjacent to Colorado Springs with the preparation of maps and a report. Individual work under the guidance of the instructor.

CIVIL AND IRRIGATION ENGINEERING.

PROFESSOR MARTIN, ASSISTANT PROFESSOR ALBRIGHT.

1. *Theory and Practice of Surveying*.—Mathematics 3 must precede or accompany this course. Construction, use, and adjustment of instruments; pacing, use of chain, compass, level, and transit; contouring and leveling by hand; cross-sections; azimuth traverse; balancing survey; computation of areas and volumes; mapping. First half-year, 2 hours. *Required of Civil Engineers in the Freshman year, and of Foresters in the Freshman year.*
2. *Field Astronomy*.—Prerequisite, Civil 1, Civil 201. The practical application of astronomy to the problems of surveying. Determination of latitude, longitude, azimuth, and time by means of the sextant, engineer's transit, and chronometer. Second half, Sophomore year, two recitations, three hours, field work, credit 3 hours. *Required of Civil Engineers.* Fee, \$2.00.
5. *Advanced Surveying*.—Continuation of Course 1. Topographic surveying; stadia measurements, plane table; hydrographic surveying; city surveying; geodetic surveying; mineral land and mine surveying; elementary railway curves. Recitations, lectures, and assigned reading. The field work problems are assigned on the basis of the student's previous field experience. The following surveys and maps are required: Transit and stadia topography; plane table topography; repetition traverse; reservoir site; street grades; city subdivision; hy-

drographic survey; triangulation survey. Students seeking advanced credit in surveying must present note-book covering the work for which credit is sought. First half-year, 2 hours. *Required of Civil Engineers in the Junior year, and of Foresters in the Sophomore year.*

7. *Elementary Plane Surveying.*—A course in the use and adjustment of instruments for Electrical Engineers. The course is designed to give a general idea of surveying methods and the use of simple surveying instruments. It is necessarily elementary in character and restricted in scope. Second half-year, Junior year, three hours' field work, credit 1 hour. *Open only to Junior Electrical Engineers.* Fee, \$2.00.

PROFESSOR MARTIN AND ASSISTANTS.

20. *Railway Curves.*—Theory of simple, compound, and transition curves, vertical curves, frogs, switches, and crossings. Recitations, field work, lectures, and problems. First half-year, Junior year, 2 hours. *Required of Civil Engineers.*
21. *Railway Engineering.*—Reconnaissance; preliminary survey; maps and profiles; location; cross-sections; earthwork computations; mass diagram; yard layouts for freight and passenger use; construction of wooden trestles and masonry culverts; tunnels; track; ordinary and extraordinary methods of drainage; water supply, its quality, storage, and delivery; preservation of timber, block signals; general maintenance. The field work of this course involves the location and cross-sectioning of a short railroad line, together with the preparation of maps, profiles, and estimates necessary to put it under construction. Second half, Junior year, 3 hours. *Required of Civil Engineers.*
22. *Railway Economics.*—Sources and value of train resistance; the relation of curvature and grades to velocity and maximum train load; effect of momentum; balance of grades for unequal traffic; analysis of operating expenses; cost of extra distance, curvature, rise and fall, and of additional trains; effect of roadbed on cost of running trains; pusher grades; value of additional traffic; improvement of old lines; standard plans; estimates of cost. Lectures, recitations, problems and design work. Second half, Senior year, one recitation, three hours in drafting room, credit 2 hours. *Required of Civil Engineers.*

PROFESSOR MARTIN, ASSISTANT PROFESSOR MOORE.

31. *Masonry.*—Cement, concrete, and masonry; stone and brick, requisites, tests, durability, classifications, and specifications;

stone-cutting, quarrying, dressing and bedding; manufacture of brick; composition and manufacture of limes and cements; their requisites, tests, specifications, preservation and use; natural and Portland cements, sand, gravel, broken stone; proportions and quantities of concretes; economic proportions; concrete mixing and depositing; artificial stones; preservations; methods of quarrying, drilling, channeling, and wedging, use of explosives; classification and specifications of stone and brick masonry; measurements and cost; strength and durability; safe loads on masonry. Recitations, lectures, and notes. First half, Junior year, 2 hours. *Required of Civil and Irrigation Engineers.*

32. *Masonry Structures.*—Pressure and abutting power of earth; design and construction of retaining walls; stability of masonry structures, including towers and chimneys; theory and design of arches; theory and design of reservoir walls, earth and high masonry dams; applications of the theory of concrete steel design. Recitations, lectures, and design work in the drafting room. First half, Senior year, 2 hours. *Required of Civil and Irrigation Engineers.*

33. *Foundations.*—Foundations of steel grillage and of concrete-steel for buildings; safe loads on masonry and foundation beds; examinations of foundation sites; pile driving and pile foundations; sheet-piling and coffer-dam methods; pneumatic foundations and caisson work; open dredging; bridge piers of masonry and steel; deep foundations; sub-aqueous tunneling. Lectures and design work. First half, Senior year, 2 hours. *Required of Civil and Irrigation Engineers.*

PROFESSOR MARTIN AND ASSISTANTS.

41. *Hydraulic.*—Flow of water through orifices; time required for discharge of canal locks and similar volumes; weir discharge and gauging by weirs; gauging of water for irrigating systems flow through the discharge of pipes; design of pipe systems; the Venturi meter; flow and discharge of open canals and rivers; principles of impulse and of reaction water wheels. First half, 2 hours. Recitations and problem work. *Required of all Junior Engineers.*

42. *Hydraulic Laboratory.*—Application in the laboratory of the principles and theory studies in Course 41. First half, Junior year laboratory 3 hours, credit 1 hour. Open to those who have registered in Course 41. *Required of Junior Civil Engineers.* Fee, \$3.00.

43. *Hydraulic Engineering.*—Continuation of Course 41. Collection and storage of water; analysis of hydrographic data with

particular reference to Colorado and other Western states; hydraulic motors; design of hydro-electric power plants. Recitations lectures, design work, and assigned reading, credit, 2 hours. *Required of Senior Irrigation and Electrical Engineers.*

PROFESSOR MARTIN.

51. *Irrigation Engineering.*—Irrigation of land; amounts and periods of application; grades, cross-section, and capacity of canals; surveys for irrigation works; source of water supply; hydrographic data; Colorado streams; return of seepage waters; irrigation by pumping. Lectures, recitations, design work, and assigned reading. Second half, Senior year, 3 hours. *Required of Senior Civil Engineers and of Junior Irrigation Engineers.*
61. *Water Supply.*—Rainfall and storage; flow of streams; influence of soils, elevation and geologic characteristics of water-shed; methods of supply; underground flow; reservoir construction; distributing systems; house-supply and wastage; water purification; sand filters, design and construction of water supply system for typical town; maintenance, and office records. Recitations, collateral reading, and design work. First half, Senior year, 3 hours. *Required of Civil and Irrigation Engineers.*
62. *Sanitary Engineering.*—Treatment and disposal of sewage and refuse by sedimentation, precipitation, and use of septic tanks; treatment of effluent by continuous and intermittent sand filtration; fertilization; disposal of sludge; sewage and surface drainage of cities and towns; separate and combined systems of sewers; capacity of mains and branches; catch-basins, manholes; flush-tanks; outfalls; grades and sections; flow and discharge of sewers; construction. Lectures, recitations, and assigned readings. Second half, Senior year, 2 hours. *Required of Civil and Irrigation Engineers.*
71. *Roads, Pavements and Parks.*—Surveys and locations; drainage and grades; foundations; selection and treatment of materials; maintenance of roads and pavements; design, construction, and maintenance of parks and parkways. Lectures, recitations, and assigned readings. Second half, Senior year, 2 hours. *Required of Civil Engineers.*

PROFESSOR MARTIN AND ASSISTANTS.

81. *Resistance of Materials.*—Laws of elasticity in homogeneous materials; coefficients of elasticity; relations between stresses and strains; common theory of torsion and flexure; elastic

limits, working stresses and ultimate resistance of wrought iron, cast iron, steel, alloys, timber, building stones, concrete and masonry; simple and continuous beams; design and construction of iron, steel, and timber columns and beams, theory of reinforced concrete construction with applications; shafts; cables; specifications. First half, 3 hours; second half, 2 hours. *Required of all Junior Engineers.*

82. *Testing Laboratory.*—Tests of the materials of construction, including steel, wrought iron, cast iron, brick, stone, cement, concrete, and timber. Each student is required to make individual tests and reports. Second half-year, one 3-hour laboratory period per week, credit 1 hour. *Required of all Junior Engineers.* Fee, \$4.00.

83. *Stresses.*—The truss element; simple non-continuous trusses with parallel chords; fixed and moving loads; through the deck spans; position of any system of concentrated moving loads for greatest chord and web stresses; combination of analytical and graphic methods; application to bridge and roof trusses; arched ribs. Two recitations, three hours in drafting room, with problems; lectures. Second half-year, Junior year, credit 3 hours. *Required of Civil Engineers.*

84. *Bridge Design.*—Railway and highway bridges; pin and riveted connections; single and multiple systems of bracing; the design of details for bridges, roofs, and buildings; floors for railway and highway bridges; design and operation of draw-bridges, cantilever structures; wind loads and stresses; single and double track viaducts or trestles in iron, steel, and timber; complete design of a railway bridge, with estimates of cost. First half, two recitations, three hours in the drafting room; second half, two recitations, six hours in drafting room; lectures. Throughout the Senior year, credit, first half-year, 3 hours, second half-year, 4 hours. *Required of Civil Engineers.*

FIELD COURSES IN SURVEYING

At Manitou Park, Four Weeks During June and July.

PROFESSOR MARTIN, AND ASSISTANTS.

201. *Field Practice in Plane Surveying.*—Prerequisite, Civil 1, Graphics 1. Four weeks in Manitou Park, between the Freshman and the Sophomore years. Credit 4 hours. *Required of Civil and Irrigation Engineers, and Foresters.* Fee, \$10.00.

211. *Field Practice in Advanced Surveying*.—Prerequisite, Civil 5. Forester's Course. Credit 4 hours. Four weeks in Manitou Park. *Required of Foresters*. Fee, \$10.00.
221. *Railway Field Work*.—Prerequisite, Civil 21. Two weeks in Manitou Park, between the Junior and the Senior years. Credit 2 hours. *Required of Civil Engineers*.
241. *Field Practice in Hydrographic and Mineral Land Surveying*.—Two weeks in Manitou Park, between the Junior and the Senior years. Credit 2 hours. *Required of Civil Engineers*. Fee for Courses 221 and 241 together is \$10.00.
251. *Field Practice in Irrigation Surveying*.—Prerequisite, Civil 5. Four weeks in Manitou Park between Junior and Senior years. Credit 4 hours. *Required of Irrigation Engineers*. Fee, \$10.00.

ELECTRICAL ENGINEERING.

PROFESSOR THOMAS.

1. *Elements of Electrical Engineering*.—A theoretical course covering the fundamental principles of direct currents and their application in direct current machinery. The text used is Franklin & Esty's *Elements of Electrical Engineering*, Volume I, and is supplemented by lectures and assigned work in Lyon's *Problems in Electrical Engineering*. Equivalent to Physics 11. Required of Electrical Engineers. First half, Junior year, credit 4 hours.
2. *Alternating-Current Theory*.—A continuation of Electrical 1, taking up alternating current theory and application in alternating current circuits. Texts: Jackson's "*Alternating Currents and Alternating Current Machinery*," Chapters I to IX inclusive, and Lyon's *Problems in Electrical Engineering*. The text book work is supplemented by lectures. Prerequisite Electrical Engineering 1. Equivalent to Physics 12. Required of Electrical Engineers. Second half, Junior year, credit 3 hours.
3. *Advanced Electrical Laboratory*.—Magnetic measurements, the measurement of conductivity and insulation resistance, the calibration of direct-current instruments and tests such as the location of faults in telephone circuits, etc. Equivalent to Physics 13, (p. 76). First half, Junior year, two 3-hour periods, credit 2 hours.
4. *Alternating-Current Measurements*.—The calibration of commercial alternating-current instruments for the measurement of current, electromotive force, and power. Also studies of the

instrument transformer, phase and frequency meters, and of inductance, effective resistance, and resonance. The measurement of power and the phase relations of polyphase circuits. First half, Senior year, one 3-hour period, credit 1 hour. Prerequisite, Electrical Engineering 2.

- 5 *Alternating-Current Machinery*.—A lecture course on alternating current machinery, including generators, motors, converters, and transformers. The lectures are supplemented with problem work and assigned reading in Jackson's "*Alternating Currents and Alternating Current Machinery*," McAllister, Karapetoff, Steinmetz, and the technical press. Required of Senior Electrical Engineers. Throughout the Senior year. 3 hours each half-year. Prerequisite, Electrical Engineering 1 and 2.
- 6 *Electrical Measuring Instruments*.—A course of study in the theory of various direct-current measuring instruments, including those used in Electrical 3. Text: *Electrical Meterman's Handbook*, published by the National Electric Light Association. The text is supplemented by lectures. Second half, Junior year, 1 hour.
- 7 *Alternating-Current Instruments*.—The theory of various types of alternating-current measuring instruments, including the instruments used in Electrical 4. A continuation of Electrical 6, using the same text. First half, Senior year, 1 hour.
- 8 *Direct-Current Electrical Engineering Laboratory*.—The work of this course includes the ordinary tests of direct-current machinery, such as efficiency by brake for motors, by loading for generators, and by the stray-power method, heat runs, regulation and parallel running, and the analysis of losses. Each student presents a carefully prepared preliminary report covering the theory of the experiment and the method of procedure which is corrected and must be approved before the experiment may be performed. Each student also presents a final report which in addition to the working up of the experiment includes an analytical discussion of the experiment and its results. Equivalent to Physics 14. Second half, Junior year, one afternoon for preliminary reports and one 3-hour laboratory period, credit 3 hours. Prerequisite, Electrical Engineering 1.
- 9 *Electrical Distribution*.—A lecture course dealing with commercial and technical features of the generation, distribution, and consumption of electrical energy. A portion of the work is covered by text-book assignments to Chapters VII. to X. of Vol. I and Chapters XV. and XVI. of Vol. II of Franklin and Esty. First half, Senior year, 2 hours. Prerequisite, Electrical Engineering 1 and 2.

10. *Electrical Engineering*.—A lecture course dealing with some of the problems and systems of long-distance, high-tension transmission and electric traction. This lecture course is supplemented with problems. In the last part of the semester, Steinmetz's *Transient Electric Phenomena* is used as a text. Prerequisite, Electrical Engineering 9. Second half, Senior year, 2 hours.
11. *Alternating-Current Electrical Engineering Laboratory*.—The work of this course includes such tests as regulation from open and short-circuit characteristics, regulation and efficiency by loading, efficiency by the retardation method of analyzing losses, and the parallel operation of alternators; synchronous motor tests, induction motor tests, and tests of the losses and regulation of transformers, both by loading and by "loading back." Throughout the Senior year. One afternoon for preliminary reports, and one 3-hour laboratory period, each half-year, credit 3 hours. Electrical Engineering 5 must be taken at the same time or previously.
12. *Dynamo Design*.—A lecture and class room course, considering the materials of construction, armature windings, and the principles of calculation in the design of direct-current machines and transformers. Text, Gray's *"Electrical Machine Design."* First half, Senior year, 1 hour. Prerequisite, Electrical Engineering 1 and 2.
13. *Electrical References*.—A course of reference work in connection with the important articles in the current technical and scientific periodicals. Assigned readings and abstracts. Throughout the Senior year. Each half-year, 1 hour.
14. *Electrical Engineering for Civil and Mining Engineers*.—This course, required of all engineers except Electrical Engineers, is given throughout the Senior year. It covers the principles of both direct and alternating current and their application in machines and transmission. Texts: Franklin & Esty's *Elements of Electrical Engineering*. Vol. I, and Jackson's *"Alternating Currents and Alternating Current Machinery."* Each half-year, 3 hours.

MECHANICAL ENGINEERING COURSES OFFERED BY THE ELECTRICAL ENGINEERING DEPARTMENT.

MR. BLAKEY.

15. *Power Plants*.—A study of steam boilers, reciprocating engines and their valve gears, and turbines. The construction, operation, and testing of the machines and their auxiliaries, and the

conditions affecting their economical use are considered in detail. Lectures, problems, and assignments in Gebhart's *Steam Power Plant Engineering*. *Required of all Engineers*. Second half, Junior year, 2 hours.

16. *Thermodynamics*.—A study of the principles and concepts of thermodynamics which are essential to the study of the construction and operation of the steam engine, steam turbine, air compressor, gas engine, and their auxiliaries. In the latter part of the course a study is made of valve gears. *Required of all Engineers*. First half, Junior year, 2 hours.

PROFESSOR THOMAS.

17. *Engineering Inspections*.—An excursion course designed to acquaint the student with modern practice in electrical and mechanical engineering by visiting power and manufacturing plants. Four or five days are spent each year on one of these trips. One trip is to Denver and vicinity and the alternate trip includes Pueblo, Cañon City, and the Cripple Creek District. *Required of Junior and Senior Electrical Engineers*. Credit 1 hour for both trips.

Laboratory Fees per half-year: Electrical Engineering 4, 8, 11, \$3.00; Electrical Engineering 3, \$4.00.

GRAPHICS.

ASSISTANT PROFESSOR MOORE.

In the Freshman and Sophomore years, students are expected to devote more time to drawing than the number of hours assigned in the statements given below, but may do the extra work at such hours as suit their convenience.

Students in all engineering courses are expected to provide themselves with a good and complete set of drawing instruments—design and make to be approved by the instructor.

1. *Elements of Drawing*.—This course includes elementary exercises to develop facility in the use of the instruments, selected geometrical problems, cross-sections, shading with the right line and the bow pen, conventional representations, mathematical curves, cycloidal, and other motion curves, isometric, oblique and orthographic projections, working drawings, tracings, the form and proportions of standard letters, both free-hand and ruled, methods of spacing and laying out titles. First half, Freshman year, 6 hours, credit 2 hours. *Required of all Engineers*.

Descriptive Geometry.—The work consists of recitations from text-books and the graphic solution of problems. After the necessary elementary problems, special attention is given to the practical side of this subject, in its relation to stereotomy, pattern-making, sheet metal work, architecture, mine surveying, and machine drawing. First half, Freshman year, 1 hour; second half, Freshman year, 8 hours, credit 5 hours. *Required of all Engineers.*

Machine Design.—Includes recitations from text-books, the copying and tracing of machine drawings, drawing to scale from models and machine parts, working, detail, and assembly drawings, laying out tooth-wheel gearings, and the making of original working drawings from specifications. First half, Sophomore year, 4 hours, credit 2 hours. *Required of all Engineers.*

Graphic Statics.—This course includes the study of forces, stresses, couples and moments of inertia, and is introductory to the later course on Theory of Trusses. Recitations from text-books are followed by the application of the principles in the solution of practical problems in roof trusses, involving permanent and temporary loads, snow loads, and wind pressures. Second half, Sophomore year; first half-term, 2 hours; second half-term, 4 hours, credit 2 hours. *Required of Civil Engineers.*

Theory of Mechanism.—The course consists of text-book recitations on theoretical mechanism, motion and interaction of machine parts, mathematical problems in machine design, tooth gearing, link motions, etc., with drawing of plates illustrating the practical application of the problems. Second half, Sophomore year; first half-term, 2 hours; second half-term, 4 hours, credit 2 hours. *Required of Electrical Engineers.*

Forester's Course in Elements of Drawing.—This course consists of exercises selected from the Engineers' Course, Graphics 1. It is intended to prepare and fit the Forestry students for the work of making and lettering maps. This course is a prerequisite for Civil 1, Civil 201, and Forest Mensuration. First half, Freshman year, 2 hours, credit 1 hour. *Required of all Forestry Students.*

SHOP.

MR. BLAKEY.

In the mechanical laboratory it is aimed to give students some knowledge of carpentry, wood-turning, pattern-making, blacksmithing, machinists' bench and vise work, and iron lathe and machine tool work. Practical talks and lectures are given.

1. *Bench and Lathe Work in Wood*.—Students acquire a practical knowledge of the handling of tools and keeping them in order, and of executing joints in wood, and thus learning constructive principles in engineering work. Models of wooden roof trusses and bridges are made. The latter part of the course is devoted to lathe work in which the student learns to do inside and built-up work as well as the more general turning operations. First half, Freshman year, 2 three-hour periods, credit 2 hours. *Required of all Engineers.*
2. *Pattern Making*.—Patterns which require both bench and lathe work, such as those for cores, valves, pulleys, sheaves, gear wheels, rack and pinions and other parts of machines are made. First half of second semester of Freshman year, 2 three-hour periods, credit 1 hour. *Required of Electrical Engineers.* Prerequisite Shop 1.
3. *Forging*.—Students acquire a practical knowledge of the handling and working of iron and mild steel; of the operations of bending, forming, upsetting, punching, splitting, welding, tempering and tool-making. Second half of second semester Freshman year, 2 three-hour periods, credit 1 hour. *Required of Electrical Engineers.* Second half, Sophomore year, 1 three-hour period, credit 1 hour. *Required of Civil Engineers.*
4. *Work in Iron*.—The student does general bench and floor work including chipping, filing, scraping, threading and tapping, and brazing. During the latter part of the course work is done involving some of the more simple operations on the machines. Second half, Sophomore year, 1 three-hour period, credit 1 hour. *Required of Electrical Engineers.*
5. *Machine Work*.—Operations are performed with the various machines as follows:
 - (a) With the lathe; turning, boring, thread cutting, tapering, eccentric turning, etc.
 - (b) With the milling machine; surfacing, slotting, fluting, gear-cutting, spiral-grooving, etc.
 - (c) With the shaper; surfacing, slotting, etc.
 - (d) With the drill press; drilling, reaming, etc.
 - (e) With the universal grinder; grinding surfaces, cylinders, milling cutters, reamers and various other tools.

Second half Junior year, 1 three-hour period, credit 1 hour.
Required of Electrical Engineers. Prerequisite, Shop 4.
Fees.

Shop 1, 4, and 5.....	\$4.00
Shop 2 and 3.....	2.00

FORESTRY.

PROFESSOR TERRY, AND MR. GOETZ.

1. *Forest Mensuration*.—The use and construction of log rules, the determination of the contents of logs in board, cubic, and cord measure; the contents of standing trees and exact methods of determining the contents of whole stands. The construction and use of volume and yield tables; the increment in diameter, height, and volume of single trees and whole stands; the determination of the age of single trees and stands. Lectures, 5 hours, and field work. First half of the fall term. Text-book: Graves's *Forest Mensuration*.
2. *Forest Surveying and Timbering Estimating*.—Methods of making forest maps showing types and topography. Plane table and traverse board methods, measuring distances by stadia, chain, or pacing. Use of aneroid barometer, hand level and clinometer. Different methods of estimating timber. After a number of small areas in the Manitou Forest have been estimated by intensive methods, camping trips are made to different parts of the Pike National Forest and large tracts of timber are estimated and mapped. Forest Service reconnaissance methods are compared with other methods of timber cruising. Last half of the fall term. Graves's *Mensuration*; Cary's *Hand-book for Northern Woodsmen*, and *The Woodsman's Handbook*, published by the Forest Service, are used for text and reference.
3. *Dendrology*.—Monographic study of the important forest trees of the United States; their classification, identification, distribution, and silvical characteristics. During the fall field trips will be taken to familiarize the students with the forest flora in the Manitou Forest and surrounding region. The distribution of forest types in this part of the Rocky Mountains and the requirements of the species composing these types will be studied in their natural habitat; lectures or recitations 5 hours, 6 hours laboratory during the winter term.
4. *Wood Technology*.—The structural, mechanical, physical, and chemical properties of wood, including timber-testing on Olsen and Riehle machines. The identification of the more important commercial woods. Both microscopic and gross structure are studied. Methods of wood-preservation. Lectures 2 hours, laboratory 4 hours, during the winter term.
5. *Silviculture*.—The physical foundations of silviculture—influence of temperature, light, moisture, soils, and other site factors on forest growth. The principal silvicultural systems, both of natural and of artificial regeneration, and the adaptability of

these systems to American conditions. Thinnings and improvement cuttings. The field work will consist of collecting data for forest descriptions and for silvical descriptions of individual species—the data to be embodied in reports—and in making thinnings, improvement cuttings, and silvical investigations and experiments in the Manitou Forest during the spring term; lectures 3 hours and assigned readings during the winter term.

6. *Forest Protection.*

- (a) *General Protection.*—Protection from fire, animals, and adverse climatic influences.
- (b) *Forest Entomology.*—A study of the life histories and habits of insects injurious to forest trees and products. Identification and methods of control.
- (c) *Diseases of Trees.*—Injuries to trees caused by parasitic fungi; also the causes and effects of wounds and the treatment of such injuries. The course includes a consideration of normal and pathological physiology. Field investigations of specific cases of injury by insects, fungi and other agencies. During the Fall and Spring terms; lectures or recitations, 2 hours, and assigned readings during the winter term.

7. *Forest Planting.*—At the proper time during the fall term, the students will collect seed of yellow pine, Douglas fir, spruce, and other species growing in the Manitou Forest, to be used in the planting operations in the spring term. (Fall seeding will also be tried.) Experiments in different methods of direct sowing and planting will be carried on. Each student will prepare a planting plan for a portion of the Manitou Forest. Three or four weeks of the spring term will be spent in nursery work at the Forest Service Nursery at Monument, Colorado, under the direction of the Nursery manager. (Monument is a half-hour's ride by rail from Colorado Springs.) Lectures, assigned reading, field work and reports during the spring term.

8. *Forest Improvement Work.*—The location and construction of forest roads, trails, bridges, telephone lines, fire lines, lookout stations, ranger stations, and other permanent improvement work on the National Forests, will be studied by lectures, assigned readings and inspection; and two or three weeks of the spring term will be spent in actual work on one or more of these operations, generally under the direction of a Forest Service officer. A complete fire-protective system of trails, fire-lines, lookout stations and telephones is being planned for the Manitou Forest and adjacent parts of the Pike National

Forest, and will be carried out under a cooperative agreement with the Forest Service.

9. *Forest Management*.—The valuation of forest land, methods of regulating the yield, and the preparation and execution of working-plans for the management of forest property. The students will make a practical working-plan for a portion of the Manitou Forest, and from year to year each class will also help to execute the provisions of the general working-plan for the whole Forest. Lectures, field and office work daily during the fall term.
10. *Forest Utilization*.—The development of the lumber industry in the United States. Methods and costs of lumbering, milling, and marketing in the different forest regions. Minor forest products. Lectures or recitations 5 hours a week, and assigned reading during the winter term. During the fall term the students will participate in the harvesting of the annual cut from the Manitou Forest—thus obtaining practice in felling, log-making, skidding, and other logging operations.
11. *Forest Geography*.—The forest regions of the United States; detailed descriptions of the more important forest types and of commercial tree species; methods of silviculture and management; the National Forests; a few lectures on the forests of Canada, Alaska, the Hawaiian and Philippine Islands, and Mexico. The physiography of the United States will be considered in connection with the forest regions. Meteorology and the Climatology of the United States will be treated in a general way, especially in their relation to forest growth and distribution. This course will also provide a comprehensive review of the courses in Dendrology and Silviculture, which will be of value to students preparing for the civil service examination. Lectures or recitations 5 hours a week and assigned readings during the winter term.
12. *Forest Policy*.—History of the development of forest policies and administrative methods under the influence of economic and political conditions; forest legislation and administration of selected foreign countries; Federal and State forest laws; the organization of the Forest Service and its administration of the National Forests. Forest taxation. Fernow's *History of Forestry* and *Economics of Forestry* are used for reference. Lectures or recitations 3 hours, and assigned readings during the winter term.
13. *Lumbering Operations*.—The Senior class will spend the spring term on some timber tract or tracts where extensive logging and saw-milling operations are in progress. They will study these methods in detail, considering the costs of the various

operations, business organization and methods, efficiency of labor and of equipment. They will also estimate the timber and make a logging plan for the tract. The work will round out and also comprise a resumé of the courses in Forest Surveying and Estimating, Forest Management, and Forest Utilization.

COURSES FOR TEACHERS.

Courses will be arranged, on application, for teachers of the city at hours convenient for them, either late in the afternoon or on Saturday mornings. Such courses, if passed successfully, will be credited as college work.

MUSIC.

For courses in Music, including those counted toward a College Degree, see pp. 93-6.

Department of Music

FACULTY.

WILLIAM FREDERICK SLOCUM, D.D., LL.D. 24 College Place
President.

EDWARD DANFORTH HALE, A.M. 1428 N. Nevada Ave.
*Dean of the Department of Music and Professor of the Theory
and Literature of Music, and the Pianoforte.*

A.B. (Williams College), '80; A.M. (*ibid*), '83; Professor at the
New England Conservatory, '85-'04; Colorado College, '05.

ROBERT HAMILTON BERRYHILL. 242 E. Yampa St.
Instructor in Pianoforte.
Colorado College, '10.

MRS. GEORGE MAXWELL HOWE. 1811 N. Nevada Ave.
Instructor in Violin.

Cincinnati Conservatory of Music, '01-'03; Stanton College, Natchez,
Miss., '03-'05; Sternsches Konservatorium, Berlin, '05-'06;
Woman's College, Columbia, S. C., '06-'07; Colorado College, '10.

VIOLA PAULUS. 2021 N. Tejon St.
Instructor in Voice Culture.

The German Wallace College School of Music, '99-'01; Northwest-
ern School of Music, '01-'05; Pupil of Mme. Emma Freyhofer,
Carlton Hackett; Instructor in American Conservatory, Chi-
cago, '05-'09; Colorado College, '10.

ADMISSION.

To preparatory courses and to all special studies students are
admitted without examination. *Pianoforte* PREPARATORY is a require-
ment for admission to *Pianoforte* (a).

COURSES OF STUDY.

1. *General Musical Culture*.—Outlines of Musical Notation, No-
menclature and Acoustics; Musical Structure, Formal, Har-
monic, and Contrapuntal; the Symphony, the Orchestra, and
the Orchestral Score; the Masterpieces of Oratorio, Opera,

Concerto, and other large forms; Musical History, Biography, and Criticism. This course is designed to appeal to all classes of students; in particular, through both concrete and imaginative treatment of the subject, to those who, for various reasons, cannot acquire the musical technique, but would be glad to give music a place in their culture scheme, in order to qualify themselves for intelligent criticism and appreciation of the art. One year, 4 hours. Tuition, \$10.00 each half-year. Free to music students.

2. *Pianoforte*: PREPARATORY.—A course normally occupying three years, designed to qualify for admission to the Collegiate course. It may be pursued here or under accredited teachers. At the end of it the student is expected to show satisfactory knowledge of musical notation and elementary nomenclature; of all scales and arpeggios, with the ability to execute them at a moderate tempo; and of the following literature or its full equivalent, including the musicianly performance by heart of a representative program chosen from it:

Bach: The Magdalena Bach Clavecin Book.

Haydn: *Sonatas*, G major, 2-4, D major, 4-4 (moderato).

Mozart: The easiest sonatas in C major and F major.

Mendelssohn: *Kinderstuecke*, Op. 72 and the easiest numbers of *Songs Without Words*.

Schumann: The *Jugendalbum*.

Pianoforte: COLLEGIATE.

- (a) Structural, memory, technical, critical and interpretative study of a satisfactory group of works by the classical, romantic, and modern composers. The presentation of a typical program made up from this group, containing compositions by Bach, Haydn or Mozart, Mendelssohn or Schumann. (Typical pieces, first year, Mozart, *G major Sonata*, Mendelssohn, *Song Without Words*, No. 45.) Sight-reading. Forming and maintenance of a répertoire; study of Gow, Cutter, Goetschius, Matthay, Breithaupt, Leschetizky. and other works on structure and technique.
- (b) A second year, continuing *Pianoforte* (a). A program containing works by Bach, Beethoven, Chopin. (Typical pieces, second year, Beethoven, *Op. 14, No. 2*; Chopin, *Nocturne in B, Op. 32*.) Répertoire and sight-reading.
- (c) A third year continuing *Pianoforte* (b). A program containing works by Bach, Beethoven, Schumann or Chopin or Brahms. (Typical works, third year, Haydn *E flat Sonata 44*; Schumann, *Novelette in E*.) Répertoire and sight-reading.
- (d) A fourth year, continuing *Pianoforte* (c) and including ensemble, chamber music, and other concerted works. A program containing a concerto by Mozart, Beethoven, or Raff.

(Typical works, fourth year, Bach, *Italian Concerto*, Beethoven, *Op. 22*; Brahms, *Scherzo in E flat Minor*). Répertoire and sight-reading.

3 *Composition*.—Each half-year, 2 hours.

- (a) Counterpoint, melody forming; two-part counterpoint, first order. Harmony, first principles. Texts by Hale, Duncan, Goetschius, Spalding. Original melodic phrases. Ear training.
- (b) Two-part Counterpoint, second and fourth orders. Harmony, elementary four-part writing. Texts as given above, with Chadwick, Foote, and Spalding. Original tunes harmonized. Ear-training.
- (c) Two-part Florid Counterpoint and Syncopated Counterpoint. Harmony, four-part writing. Texts as given above. Sketches in two-part and three-part song-forms. Ear-training.
- (d) Double Counterpoint, three-part Counterpoint. Harmony, modulation, chromatic harmonics. Texts as given above with Norris. Song-forms with trio; Minuet. Ear-training.
- (e) Counterpoint; imitation; canon. Texts by Goetschius, Spalding. Rondo. Ear-training.
- (f) Counterpoint; the Invention. Texts as given above. Sonata-Allegro. Ear-training.
- (g) Counterpoint, Figured Chorale. Sonata-Rondo. Ear-training.
- (h) Figured Chorale. Fugue. Ear-training.

Students satisfactorily completing Courses 1, 2, and 3a, b, c, d, together with a high school course or its equivalent, are entitled to receive the Diploma for Special Courses, except 3. Students specializing in Violin or Voice may substitute for Course 2 a satisfactory equivalent; but they must qualify in the requirements for admission to 2a (p. 88). The Full Diploma, is awarded upon the completion of Courses 1, 2, (or its equivalent), 3 and 4; but students substituting 5a or 5b must take at least 2a.

4. *Orchestration*.—Each half-year, 1 hour.

5a. *Violin*.

5b. *Voice-Culture*.

SPECIAL COURSES.

Pianoforte, Organ, Violin, Voice, the Orchestral Instruments, Counterpoint, Harmony, Composition, Orchestration. Students may enter these without examination, and pursue them for any desired period (but not less than one-half year or unexpired portion thereof). No credits are given unless some regular course be adopted later, in which satisfactory work will be permitted to count.

Through its weekly conferences conducted by the Dean, its weekly and semester recitals given by students and faculty, its Glee Clubs and Orchestra, the Department provides the free and all-round advantages which can be had only in a well-equipped school. Students have the special privilege of consulting the Dean daily upon all practical problems arising in the course of their study. This, which is practically a daily lesson scheme, offers a great opportunity to the ambitious student. There is a growing demand in the secondary schools of Colorado and other states for teachers that, beside their liberal arts work, are competent to teach the pianoforte and the related musical theory. This department offers a normal course designed explicitly to qualify young men and women to do this work.

FINE ARTS MAJOR.

Candidates for the degree of A.B. may obtain a major in Fine Arts under the following conditions. They must take a minimum of eight half-year hours in music and the same amount in Art and Archæology. In addition six hours must be taken in one of these departments or divided among them. The remaining eight hours of the major shall be determined by the Committee on Individual Courses, in consultation with the major instructor. Music 1 (4 hours), Music 2 (2 hours—when taken in conjunction with courses 1 and 3), and Music 3 (4 hours, or 8 hours if taken a second year) are allowed to count toward this major.

EQUIPMENT.

The Department occupies the Perkins Fine Arts Hall, a beautiful College building of stone, erected in 1900, at a cost of \$30,000. It has at its command twelve class and practice rooms, a recital hall seating 200, and an auditorium seating 600, and containing an exceptionally fine Hutchings pneumatic organ, which has three manuals and fifty stops and combinations.

The Department has been recently affiliated with The Institute of Musical Art, of the City of New York, and with The New England Conservatory of Boston, and with Mme. Augusta Cottlow, of Berlin, Germany. Its standards are accepted in these cities precisely as those of Colorado College are at Harvard, Yale, and elsewhere.

TUITION.

Pianoforte, Organ, Voice, Violin, or Ensemble with Members of the Faculty—\$35.00 each half-year. Voice or Violin, two lessons weekly \$50.00 each half-year.

Composition (including Harmony and Counterpoint) or Orchestration—\$15.00 the half-year.

Flute or other Orchestral Instruments—\$20.00 each half-year.

General Musical Culture (free to Music students)—\$10.00 each half-year.

General Information

LOCATION.

Colorado College is fortunate in its environment. Colorado Springs, the county seat of El Paso County, and the third largest municipality of the commonwealth, is remarkable for its history and character, and is admirably adapted to be the seat of a college. Founded in 1874, under the direction of men of shrewd foresight and broad views, it has maintained from the beginning high standards of morality and culture. Saloons and the attendant destructive influences are absent. Radiating railroad systems and neighboring gold fields have fostered its wealth. Many visitors are attracted hither, both pleasure seekers and health seekers, but the latter are so far outnumbered that the place has none of the depressing influences so often observed at noted health resorts. The lover of nature might seek far before finding a spot more favored. The mountains are close at hand, their serrated outlines occupying about one-third of the horizon. In the center of the range less than a dozen miles away stands Pikes Peak. Its summit is reached by a cog railway, by bridle paths, and by a carriage road. About its base are many cañons, and in one of these, around a celebrated group of mineral springs, is the city of Manitou. The climate of Colorado Springs has attained a world-wide reputation by reason of the dryness and rarity of the air, and the opportunity for outdoor exercise afforded by the great number of fine days (helpful in cases of malarial disease, asthma, and incipient phthisis.) Students unable to work in other climates may here continue their studies, while at the same time making a permanent gain in health.

BUILDINGS.

The buildings of the College are situated on a tract of about 50 acres, in the heart of the best residence portion of the city. All except the Mechanical Laboratory building are of stone. Heat and electric light are furnished to all from a central plant.

Palmer Hall, completed in the fall of 1903 at a cost of \$287,000, contains the offices of administration, the laboratories, and the general lecture rooms. The style of architecture is that which has been chosen for the entire system of buildings eventually to occupy the College reservation, and, like the Library and Perkins Fine Arts Hall, it is built of the "Peach Blow" sandstone. The structure is fire proof. On the first floor are laboratories for Chemistry, Physics, Mining, Metallurgy, Electrical Engineering, and a large demonstration room. On the second floor are the offices of administration,

general lecture rooms, and other laboratories for Chemistry. Near the head of the west stairway is a large bronze tablet, dedicated to the late General William J. Palmer by the survivors of the 15th Pennsylvania Cavalry. The third floor contains the laboratories for Biology, Geology, and Mineralogy, general lecture rooms, and a large, well-lighted Museum for the natural science collections of the College. The building was equipped at a cost of \$50,000.

The Perkins Fine Arts Hall, named for one of the principal donors, the late William B. Perkins, of Colorado Springs, was completed in 1900. It is a two-story stone building, and cost \$37,000. The lower story is a large auditorium, seating 600, in which the chapel exercises are held and concerts and lectures are given. This room contains a valuable pipe organ, given by Miss Elizabeth Cheney, of Boston, Mass., in memory of her brother, Charles P. Cheney. The upper story contains the lecture and practice rooms of the Department of Music, and an exhibition room for works of art. Here now stands a bronze statue of the Flying Mercury, presented by James F. Burns, a portrait of General William J. Palmer, by Herkomer, a portrait of President W. F. Slocum, by Alexander, and a portrait of the late Professor Ahlers by Benson. The portrait of President Slocum was presented at Commencement, 1913, by friends of the College, in celebration of his quarter-centennial of service.

The Library, given in 1894 by the late N. P. Coburn, of Newton, Mass., and costing \$50,000, is of great architectural beauty and admirably adapted to its purpose. A full size cast of the "Winged Victory" of Samothrace, stands at one end of the main hall. In recesses are marble busts of Antinous and Dante, and casts of the Hermes of Praxiteles and of Mercie's David. Mr. A. L. Dickerman's collection of rare Indian curiosities adds to the interest of the room.

THE ASTRONOMICAL OBSERVATORY is the gift of Henry R. Wolcott, of Denver, and was completed in 1894. Besides the dome room it contains a lecture room, a transit room, and a photographic dark room.

THE MECHANICAL LABORATORY. Two buildings contain the dynamo room and the mechanical laboratories for carpentry, forging, and machine work.

THE PRESIDENT'S RESIDENCE, at the northern boundary of the campus, was purchased in 1888, and remodeled in 1903.

CUTLER HALL (formerly Palmer Hall), the oldest building on the campus, was first occupied in 1880. It contains recitation rooms, and chemical and physical laboratories.

COSSITT HALL. Through the generous gift of \$100,000 of Mrs. A. D. Juilliard of New York, a Men's Building is being erected, and will be completed before June, 1914. It is to contain a finely equipped gymnasium, a stadium, reading rooms, dining hall, and commons, and will be the focus of the athletic life and the social life of the men of the college. The building is given by Mrs. Juilliard in memory of her father, and will be called The Frederick H. Cossitt Memorial Hall.

COLLEGE RESIDENCES.

HAGERMAN HALL, built in 1889, is used as a home for young men. Besides the students' rooms, it contains a large social room provided with piano, games, boxing gloves, and magazines. On the roof and in the office of the Weather Bureau are the Meteorological Station instruments.

MONTGOMERY HALL was erected and furnished in 1891 by the Woman's Educational Society, and presented to the College. It provides a comfortable home for young women, and contains the rest room under the charge of the Young Women's Christian Association, for the use of all young women of the College.

TICKNOR HALL, the gift of Miss Elizabeth Cheney, was opened as a home for young women in 1898. Besides students' rooms, it contains an infirmary capable of complete isolation. The infirmary is open to all young women living on the campus, and is in charge of a trained nurse, whose services, whether in the infirmary or in the students' rooms, are paid for by an annual fee, due in September, of \$5.00 from each young woman.

MCGREGOR HALL, a commodious and convenient building, was opened in 1903 as a third residence for young women. It contains a fully equipped gymnasium.

BEMIS HALL, the center of the social life of the whole college, was opened in September, 1908. In it, besides rooms for young women, are the offices of the Dean of Women, a spacious Common Room, a large dining hall with an open wood roof after the manner of the English halls, and the Cogswell theater for college dramatics.

LIBRARY.

MANLY DAYTON ORMES, LIBRARIAN.

The Library building has been elsewhere described (p. 98). In it are, altogether, about 65,000 volumes and 40,000 pamphlets. Twenty-five hundred volumes are in the Engineering Library. The leading literary and scientific journals are received, as are also the United States Government publications and those of the State of Colorado. Of United States documents the library now has about 10,000 volumes, including the records of Congress complete from 1847, and

many valuable records for the period 1774-1847. These documents are arranged on the plan adopted in the library of the Superintendent of the United States Documents at Washington.

The largest single gift of books ever presented to the College came during the spring from the library of the late Wm. B. Clark of this city. Up to date more than 2,500 volumes have come in. These books cover every conceivable human interest and are as a rule expensively bound.

The engineering library is located in a large room 60 feet by 30 feet in the basement of the N. P. Coburn Library building. It contains 2,500 volumes on technology. This library has a complete set of the Engineering Record (formerly called the Sanitary Engineer), and Van Nostrand's Engineering Magazine; one hundred and seven volumes of the Minutes of the Institution of Civil Engineers of Great Britain; the recent volumes of the Engineering Magazine, Cassier's Magazine, Engineering News, Engineering and Mining Journal, Technical World, Electrical World, Mineral Industry, Electrical Engineer, Electrical World and Engineer, Electrician (London), Electric Journal, Technology Quarterly, Municipal Engineering, American Machinist, Journal of the Franklin Institute; the current numbers of Mining Science, Metallurgical and Chemical Engineering, Engineering Index, Chemical News, and Journal of the American Chemical Society; the recent transactions of the American Institute of Electrical Engineers, and the American Society of Civil Engineers. A complete set of the Scientific American and Scientific American Supplement, of the American Journal of Science, and the current numbers of other leading periodicals on pure science and mathematics, are kept in the main room of the Coburn Library. The engineering library has also the reports of the State Engineer, the United States Geological Survey, the United States Coast Survey, the Chief of Engineers and the Chief of Ordnance, U. S. Army, as well as the United States publications on Irrigation.

The Medical Alcove was created in 1894. It now contains nearly 3,000 volumes, including the transactions of Medical Societies, which, with standard works purchased annually, the El Paso Medical Society contributes—in all about a hundred volumes each year.

THE COBURN LIBRARY BOOK CLUB, organized in 1897, provides its members with the best new books, which are given to the Library after two years. The fee is \$5 a year or \$3 for six months. Members enjoy the full privilege of the Library. The Club has purchased 3,700 books, of which 3,400 have already been given to the Library.

The Wednesday Art Club and the local chapter of The Daughters of the American Revolution have started collections of books on their special topics.

A reading room is provided with the current literary and scientific magazines, as well as a number of leading newspapers.

The Engineering Department of the Library occupies a room in the basement prepared for the use of the Colorado Polytechnic Society. In addition to 1,500 volumes belonging to the College, it contains several valuable private libraries loaned by members of the society, to which students of the Engineering School have access, and of the Forestry Department have been moved to this room, and the three libraries placed in charge of a permanent assistant.

In Room 44 of Palmer Hall are about 300 volumes, given to the Classical Department by Mrs. M. C. Gile, to form the beginning of a department library for Greek and Latin.

LABORATORIES AND APPARATUS.

CHEMISTRY.

THE CHEMICAL LABORATORIES include: (1). The General Laboratory; (2) the Qualitative Laboratory; (3) the Quantitative and Electro-Chemical Laboratory; (4) the Organic Laboratory; (5) the Assay Laboratory. The best features of modern arrangement and construction have been embodied in these. The lighting and ventilation have received special care. The hoods are generously distributed in every room, and each hood is connected with a large separate flue. The ceilings are high, the light excellent, the desk and working space for each student is abundant, and the drainage through iron-covered floor drains is of the most approved modern type. The desks are fitted with very full sets of reagents and all facilities for the prosecution of the work in hand. Adjacent to the laboratories are the preparation rooms, which provide for the ready distribution of supplies. Smaller rooms, which are used for particular branches of chemical study, are supplied with appropriate apparatus—fine balances, spectroscope, the best Schmidt and Hænsch polariscope, Atwater bomb calorimeter, photographic apparatus, combustion furnaces, and a large assortment of metal and glass apparatus for general and analytical processes of investigation.

The Assay Laboratory is equipped with twenty-two muffle furnaces for solid fuel, and crucible and muffle furnaces for gasoline; a large furnace of reverberatory type for handling a large number of fusions at one time; ore bins; fuel bins; two power crushers; steel sampling floor and table; twelve new pulp balances, and several button balances, including two of the highest grade made by Ainsworth of Denver. It is also supplied with a large number of checked ore samples of various grades and kinds, donated by the American Smelting and Refining Company, the Ohio and Colorado Smelting and Refining Company, the United States Reduction and Refining Company, the Portland Mining and Milling Company, the Elkton Mining Company, Mr. E. C. Woodward and others.

BIOLOGY.

THE BIOLOGICAL LABORATORIES are eight rooms on the second floor of Palmer Hall. In these, each student is assigned a desk, and in courses requiring microscopic observation is furnished with a microscope for which he is held responsible. There is an abundant supply of all kinds of glassware necessary for the various courses, also micrometer eye-pieces, cameras, dissecting microscopes, paraffine baths, microtomes, life-boxes and charts. For the courses in Zoology, Comparative Anatomy, etc., a number of mounted and disarticulated skeletons and anatomical models are provided. A large amount of the museum material is also available for illustration in these courses. The physiological laboratory is supplied with such Harvard apparatus as the capillary electrometer, rheochord, inductorium, kymograph, moist chamber, heavy muscle-lever, ergograph, pneumograph, work adder, manometer, circulation scheme, respiration scheme, and many more kinds of pieces. In addition, there are on hand such pieces as Ludwig's arm support and sphygmograph, Marcy's cardiograph, stethoscope, Erlanger's and Cook's sphygmomanometers for blood pressure determinations, Thoma Zeiss Hæmacytometer for the enumeration of the corpuscles of the blood, the Fleischl's hæmometer and Gower-Haldane hæmoglobinometer for the estimation of the hæmoglobin of the blood, Lombard's modification of Mosso's ergograph, and spirometer. The equipment for Bacteriology includes incubators, Arnold steam sterilizers, autoclav, hot-air sterilizers, Becker balance, Trøemner media scale, centrifuge, animal holders, culture jars, water sampling apparatus, inoculating water baths, double boilers, hot-water funnels, counting apparatus, and other appliances essential to the work. For botanical courses clinostats, auxinometers, and a variety of smaller apparatus are provided.

THE HERBARIUM occupies a room in the Biological Department. The nucleus consists of a Colorado herbarium purchased from Marcus E. Jones, and later enlarged. The larger part of the present collection is the Edward Tatnall herbarium, presented to the College by Miss M. H. Tatnall, of Elmira, N. Y. This collection, of about 22,000 species and varieties, includes representatives of all the great plant groups. Of these there are some 900 Algæ, 1,700 Lichens, 2,000 Bryophytes, 1,050 Pteridophytes, and 16,350 Angiosperms. These specimens, carefully and fully labeled, were collected in 23 different states, Canada, Sweden and England, by 65 collectors. A catalogue makes the herbarium especially valuable.

PHYSICS.

The general equipment of the laboratory is represented by the experiments of Millikan's "*Mechanics, Molecular Physics, and Heat*," and Millikan and Mills's "*Electricity, Sound, and Light*." There are

also a large standard clock with a Shedd magnetic contact maker, a standard H. J. Green barometer presented by General Palmer, a Gærtner cathetometer, a recording chronograph, a standard meter and balances, and calipers and thermometers for precision work.

For advanced work in Electricity the equipment of the Electrical Engineering Department is available.

A photometer room with a Lummer-Brodhun photometer and a three-meter track is part of the equipment of the laboratory for work in light. There is also a large Michelson interferometer, a spectrometer, and an optical bench.

The lecture room of the Physics department is furnished with projection apparatus for transparent slides and for opaque objects such as photographs and drawings. The apparatus for experimental demonstration purposes is especially complete in light and electricity. Much of it has been imported from Max Kohl. There is a projection apparatus for polarized light phenomena; a wireless telegraph set, a Tesla coil presented by Dr. Gerald B. Webb, of Colorado Springs; a collection of Crookes and Geissler tubes; a large Toeppler-Holtz machine presented by the Alumni Association of Colorado College; several Wimhurst machines and an induction coil; and special apparatus for demonstration of phenomena in heat, sound, and mechanics.

GEOLOGY.

The general laboratory is provided with five large models and relief maps for the illustration of river work, glaciation, and vulcanism, together with a complete set of the geological maps of the United States Geological Survey, and more than 1,000 topographic maps. Suites of rock specimens are provided, covering all the main types of the igneous, sedimentary, and metamorphic rocks, as well as representative specimens from important mining districts in Colorado. A carefully prepared collection of thin sections of rocks is available for microscopic study, covering the varieties of the igneous rocks and illustrating their mineralogy. One Siebert petrographic microscope of the 1904 model is provided for every two students.

In the mineralogical laboratory a general collection, numbering several specimens for each of the 175 minerals taught in the introductory course, is set out in open cases for the illustration of the crystal forms and the variations in the massive kinds. Each student is given a working collection covering the same minerals. Crystallography is taught by means of 150 models of crystals in wood and by the aid of a small collection of transparent models. The material for the practice determinations required of every student embraces 5,000 specimens.

For the work in paleontology the collections of fossils in the

College museum are employed. They are representative of a large number of the genera in the several classes of invertebrates.

The department library contains complete sets of the publications of the United States Geological Survey, Annual Reports, Monographs, Bulletins and Professional Papers, with about 300 of the annual volumes issued by the state surveys, and general works of reference.

PSYCHOLOGY.

The equipment includes the following: Azoux dissectible model of human brain; Deyrolle "*Deux Demi-Tete*," showing distribution of cranial nerves; Deyrolle model of the spinal cord *IN SITU*, showing connections with the sympathetic system; lantern slides of gross and microscopic structure of nervous system. Models of the sense-organs are available from the Department of Biology, and cranial casts and crania of various races and animals from the Museum.

There is also one set of Helmholtz resonators, set of low forks, set of ten mounted tuning forks, four extra forks, Edelmann whistle, Quincke tubes. A Koenig sonometer is available from the Department of Physics.

A direct-current electric motor rotator with rheostat and speed recorder attached, spring suspension electric rotator, rheostat, Kirschmann photometer, Pillsbury speed reducer, kymograph with magnetic speed control and long and short drums, 100-vibration tuning fork, triple electric recording pen, Jacquet graphic chronometer, Marey tambours, bell metronome, Vernier chronoscope, two pendulum chronoscopes, split-second stop-watch, plethysmograph, Smedley dynamometer, Titchner automatograph, olfactometer, temperature and pressure points, after-image apparatus, colored and gray discs and papers, stroboscope, stereoscopes, Stratton's pseudoscope and telestereoscope, Nagel color-blindness test, visual acuity tests, spectrum chart, complication apparatus, Jastrow exposure apparatus, tachistoscope, two campimeters, etc.

In addition to the regular equipment of the laboratory, the department of psychology has recently added a shop equipped with a South Bend lathe, wood-working and metal-working tools. The shop is used for the repairing of apparatus, the building of new apparatus, and for making special pieces needed in research work.

MECHANICAL LABORATORIES.

In addition to the training of hand and eye necessary for his future studies in drafting and design, every engineering student should acquire practical knowledge of carpentry, wood turning, pattern-making, blacksmithing, tool-making, machinists' bench and vise work, and the handling of machine tools. Such practical knowledge is essential to the engineer in forming his judgments on the

details and the possible execution of his designs in the shop. To afford training along these lines, as well as to give the student a foundation for further work along the lines of structural engineering, three laboratories containing machinery of the latest and most approved patterns have been established.

1. *Wood Laboratory*.—The Wood Laboratory occupies a room 30x60 feet. It has electric drives. It is equipped with heavy maple-top cabinet benches, each having a tool cabinet furnished with the best make of tools, comprising Bailey planes, Buck Brothers' chisels, Disston saws, etc. Six wood-turning lathes of 14-inch swing have been added to the equipment, making in all twelve lathes. The laboratory has also a 32-inch band saw, a table saw, 24-inch cylinder planer, mitre saw, hand saws, a universal wood trimmer, clamps, hand screws, and tool sharpening machinery.
2. *Forging Laboratory*.—This laboratory occupies a room 30x30 feet, with a stock room 10x15 feet adjoining. A twenty-horse-power General Electric variable speed motor drives Sturtevant blast and suction fans connected with Buffalo down draft forges. The equipment consists of swage blocks, benches, vises, lockers, emery grinder, hand forge, etc.
3. *Iron Laboratory*.—The machine laboratory occupies a top-lighted room 25x100 feet. A steam engine drives the equipment and serves as an illustrative piece of apparatus. The equipment consists of machinists' benches; bulldog vises, drawers containing individual sets of tools; two 14" Bradford engine lathes; an E. E. Reid screw-cutting lathe; a Hendey-Norton 14-inch precise tool room lathe; a shaper; a Cincinnati universal milling machine with various attachments including a dividing head; a Gray planer, 24"x24"x6 feet, with double heads on cross rail, and micrometer screw adjustment; a Greenfield universal tool and cutter grinder, adapted for grinding to size, straight and taper arbors, conical or cylindrical work, internal sizing, reamers of various kinds, milling cutters, taps and dies, countersinks and counterbores; an electric centre grinder; a large and a small drill-press; an emery grinder; a machine hacksaw; grinding machinery; a gas brazing furnace; a gas annealing furnace; a pneumatic chipper, calker and riveting tool; several kinds of micrometers; face plate for finishing surfaces; large steel machinists' rules, etc. As need arises other equipment will be added to this and the other mechanical laboratories.

CIVIL ENGINEERING LABORATORIES.

1. *The Testing Laboratory*.—A room in the Mechanical Laboratories building has been assigned for the testing of materials

of construction. Here is mounted a 100,000-pound Riehle testing machine for making tension, compression, shearing and transverse tests, and an abrasion cylinder for testing paving material; both machines are driven by a five-horsepower Crocker-Wheeler motor. In addition to other accessory apparatus a Henning extensometer is available for tension tests, and an Olsen compression micrometer for compression tests, each instrument reading to one-ten-thousandth of an inch. Each student is required to make a series of tests upon the resisting properties of wood, brick, concrete, stone wrought iron, cast iron, and steel. Commercial tests, made from time to time for local manufacturers and others, bring the students into close touch with practical work of this sort..

2. *The Cement Testing Laboratory* in the basement of Cutler Hall is equipped with a Fairbanks testing machine, Virat indenting apparatus, sand and cement sieves, briquette moulds, cube moulds, Gilmore's needles, running-water, storage tanks, and other apparatus requisite for investigations in the nature and physical properties of cement and cement mortars. All students are required to make the test briquettes of cement and cement mortar, as well as to determine the weight, fineness, and other physical properties of such cement, sand, and mortar, as may be assigned to them for examination.
3. *The Hydraulic Laboratory* is in the basement of Cutler Hall. It has a floor space of 2,000 square feet, and is furnished with an ample supply of water. It is equipped with a calibrated tank of 1,500 gallons capacity; weirs of different shapes and sizes, and with a variety of orifices for the purpose of determining hydraulic constants; apparatus for experiments in connection with the flow of water through pipes; a Venturi meter and a series of displacement meters including one each of the piston, rotary, and disc types; pressure gauges, differential gauges, thermometers, etc., as well as the portable tanks and scales usually found in such laboratories. To illustrate the principles of water motors there are a small centrifugal pump, a nine-inch Leffel turbine in a cast-iron globe case, and a twelve-inch Doble impulse wheel, designed especially for laboratory purposes. It is made with an adjustable nozzle, and furnished with a glass casing instead of the usual metal one, so that the action of the jet may be seen.

ELECTRICAL ENGINEERING LABORATORIES.

1. *The College Power Plant*, which is available for the purposes of the Department of Electrical Engineering, consists of four 115-volt G. E. compound generators direct connected to G. E. marine engines. These generators are rated at 15 kw., 15 kw.,

30 kw., and 50 kw., respectively. They are connected to a switchboard with an ammeter and a voltmeter for each machine, and a ground detector for the system. There are also feeder panels for distribution. The two 15 kw. units are used for student experiments on the parallel operation of compound generators.

2. *The Electrical Engineering Laboratory* proper is located at the present time, under the same roof as the power plant. It contains a G. E. 10-h.p., variable speed interpole motor; a Holtzer Cabot 1 h.p. series motor; a Westinghouse 20-h.p. compound motor with machine tool controller; and a G. E. 25-h.p. motor with armature speed controller. Two 1.75 kw. compound wound Crocker-Wheeler generators are used for parallel running, "pumping back," or similar tests. All of the above are for 110 volts.

The alternating current equipment consists of two 15 kw. G. E. special three-phase alternators; one La Roche special alternator (with armature composed of two parts, so that a mechanical displacement of phase from 0° to 90° may be obtained), rated at 25 kw., 2,000 volts, and 125 cycles, but at present run two phase 550 volts and 60 cycles; a 5-h.p., three-phase induction motor; a 5-h.p. Westinghouse, single phase series motor; two G. E. type H transformers; one 15 kw. and one 10 kw., 60-cycle, Wagner transformer; two Maloney transformers; and a 50 kw., 60-cycle testing transformer giving voltages up to 70,000 volts. There is also a three-phase oscillograph giving simultaneous representation of e.m.f. and current wave forms.

A new dynamo laboratory is under construction and will be ready for occupation for the work of 1914-'15.

3. *The Electrical Testing Laboratory* of the Department is located in Palmer Hall. It contains a complete and high-grade equipment for the measurement of resistance, inductances, and capacities; the measurement of magnetic constants; and the calibration of both direct and alternating current measuring instruments. There are, for example, fourteen galvanometers representing various types, both ballistic and non-ballistic, in Thomson and D'Arsonval forms. A Siemens and Halske astatic, and a Hartmann and Braun ballistic D'Arsonval should be mentioned especially. For the measurement of resistance, in addition to the regulation type of Wheatstone bridges, post office boxes, and test sets, there is a Kelvin low resistance bridge with standardized coils of 0.001 to 0.01 ohm; a Carey-Foster bridge; four O. Wolff high resistance boxes; a Leeds 0.1 ohm standard; two Wolff standards for 0.1 and 0.01 ohm; two Leeds N.B.S. standards for 1 and 10 ohms. For the com-

parison of potentials there are three standard cells; a potentiometer with a volt box for extending its range; a quadrant electrometer; a Siemens and Halske electrometer, and three Siemens and Halske torsional voltmeters with volt boxes. For the measurement of power there are several electro-dynamometers capable of use either as ammeters or as wattmeters. For the direct measurement of current, potential, or power, there are fifteen voltmeters, sixteen ammeters, and eight watt-meters of various ranges, some for d.c. and some for a.c. measurements. These instruments are portable precision instruments, and with the station instruments of the department are first calibrated by the student in the testing laboratory and then used by him in measurements on the machines in the electrical engineering laboratory. For measurements in inductance and capacity, besides several standards for each, there is a Siemens and Halske solenoid for ballistic galvanometer calibration, and a Siemens and Halske bridge for measuring small inductances. For measurements in magnetism there may be mentioned especially a Hartmann and Braun permeameter set, a Hopkinson yoke permeameter, and a Du Bois magnetic balance. A three-meter photometer track with a Lummer-Brodhun photometer permits of measurements of the horizontal and mean spherical candle power of lamps. Among the remaining instruments should be mentioned a sechometer, an ohm and farad meter, a Kohlrausch bridge, a Cardew hot wire voltmeter, and a tachometer with voltmeter.

The Department owns several switchboard instruments, some recording, representing the following types: Diamond, Bristol, Federal, Sangamo, Duncan, Shallenberger, Edison, G. E., Westinghouse, and Thompson-Houston. The Department also possesses a large collection of machines and instruments which are commercially obsolete, but of great historical or scientific interest. There are also samples of Thomas, Locke, and G. E. porcelain insulators; an assortment of Hemengray glass goods; parts of Weston instruments showing their construction; an exhibit of G. E. incandescent lamps showing the steps in their manufacture; and a collection of fuses from the Johns-Manville and the D. and W. Fuse Co.

Surveying.—The School possesses a complete working equipment of engineers' field instruments, including four plain transits, a K. & E. complete transit, a complete Berger mining transit with interchangeable top and side telescope, a Saegmuller mining transit with solar attachment, a Young and Sons mining transit with top telescope and Smith solar, a Buff and Buff triangulation transit of the U. S. Coast and Geodetic Survey pattern, a surveyor's compass, a Burt solar compass, four wye

levels, two dumpy levels, a plane table with telescopic alidade, a traverse table, a U. S. Navy pattern sextant, as well as smaller instruments and accessories. Students learn the use and adjustment of the field instruments at the Summer School of Surveying, held for four weeks during June and July at Manitou Park.

Summer School of Surveying.—Field work in surveying is done under exactly the same conditions that prevail in actual practice. This work is carried on as a continuous exercise of four weeks' duration at Manitou Park, immediately after the close of the regular College exercises, at the end of the Freshman and Junior years. The work is done under the direction of the head of the Civil Engineering Department and a corps of experienced assistants. The class is divided into squads furnished with all necessary equipment. Each squad is required to execute a stated number of surveys and to make complete notes and maps as would be required in practice. Manitou Park, the property of Colorado College, contains six thousand acres and is situated about twenty-seven miles northwest of Colorado Springs. Within the bounds of this Park are found every kind of ground over which surveys are carried. Adjacent to the Park are many mining locations and several patented claims.

The College furnishes living accommodations for the students. Students provide their own bedding.

Lantern Slides, Photographs, and Trade Catalogues.—The School has a representative collection of lantern slides on steam engineering, machine design, metallurgy, and electrical engineering; and blue prints, photographs and descriptive data of various engineering structures. The department drafting rooms contain complete reference files of catalogues and blue prints pertaining to their special engineering branches, which are freely used in connection with those courses requiring design work.

Geometrical Models.—For illustrating subjects in descriptive geometry and graphics there are in the drafting room a number of models prepared by students, including half a dozen thread models of ruled surfaces, bridge trusses, and machines. In the mathematical class-room there are a number of models of wood and of plaster of Paris.

THE MANITOU FOREST—A FIELD LABORATORY IN FORESTRY.

The Manitou Forest is a tract of 6,000 acres, situated twenty-seven miles from Colorado Springs and about eighteen miles north of Pike's Peak. It is reached by the Colorado Midland Railroad to Woodland Park, twenty miles, and then by stage, seven miles. It is

within the boundaries of the Pike National Forest. Camp Colorado, a group of cottages used in conjunction with the School of Engineering, makes a most convenient and homelike center for the field courses.

The Forest is under the direct supervision of the School of Forestry. It affords unusual opportunities for study and practical experience in the field. This tract has a good stand of Western Yellow Pine and Douglas Fir. Much of the timber is mature, and logging and milling operations are now being carried on. An abundant young growth is replacing the timber that is being removed. The rich land along a stream which waters the valley offers an excellent opportunity for the establishment of nurseries and the study of tree planting. The forest is being brought into the best possible producing condition. The students are given opportunity, under the direction of the Forestry Faculty, to take part in all the phases of the treatment and management of the forest.

The College has a good working equipment of axes, saws, calipers, surveying instruments, meteorological instruments, and such other apparatus as is needed in the study and care of the forest.

OBSERVATORY AND METEOROLOGICAL STATION.

THE OBSERVATORY has a telescope of four-inch aperture, presented by Mr. Henry R. Wolcott, of Denver, a transit and a sidereal clock, both given by the late Charles S. Blackman, of Montreal, Canada. The College Meteorological Station, now in Hagerman Hall, is well equipped with recording instruments. The largest of these instruments, the quadruple register, given by the late General William J. Palmer, records minute by minute the direction and velocity of the wind and the sunshine and rainfall. In shelters are instruments for measuring and recording temperature and humidity. A Draper barograph, given by the late Dr. S. E. Solly, affords a continuous record of the atmospheric pressure. In Coburn Library are bound records of the beginning of the meteorological library, valuable accessions to which have been received from the late General Palmer.

Special information has been furnished on request to the city engineer and to several railway companies, while tabulated statements of the current weather are supplied regularly to the local newspapers, to the city health officer, and through the Chamber of Commerce, to various applicants at home and abroad who desire them for publication.

The Observatory is regularly open to visitors on Thursday evenings during the whole year.

MUSEUM.

EDWARD ROYAL WARREN, DIRECTOR.

The Museum is on the second floor of Palmer Hall. Glass showcases extend on all sides of the room. The central part is taken up with the larger specimens. The megatherium stands in the west half, and the mounted skeleton of a whale occupies the eastern portion. Grouped around them are the large natural history specimens, casts of noted fossils, and at intervals are showcases for small specimens.

The foundation of the Museum was laid by the gift of Winfield S. Stratton.

PALEOBOTANY is represented by two cases of Carboniferous, Cretaceous, and Oligocene plant remains classified by Mr. Baker.

PALEONTOLOGY.—Several cases are given up to the display of the invertebrate fossils, which are zoologically arranged. The collection contains typical and rare forms of foraminifera, corals, crinoids, brachiopods, mollusca, and arthropoda. The mollusca and echinoderms collected by Prof. Cragin are for the most part from the lower Cretaceous. The mollusca from the Atlantic slope, presented by Prof. Wm. B. Clark of Johns Hopkins University, are chiefly Tertiary. Besides an excellent geological record, the collection contains a series of casts of noted specimens.

The foundation for the collection in vertebrate paleontology was laid by the purchase for the college of the large paleontological cabinet of Prof. Cragin by General Wm. J. Palmer and the Colorado Springs Company. This collection consists of some 8,000 specimens from Colorado, Kansas, Indian Territory, Texas, and other states, and includes remains of Pliocene horses, llamas, Miocene rhinoceroses and mastodons, Cretaceous saurians, and tertiary fishes. It is of importance not only as supplying a large part of the geological record not otherwise represented in the Museum, but also as containing the types of many new species and some new genera of fossils. Among these type fossils the most important is the large plesiosaurian reptile *Trinacromerum*, the type of a new genus and species described from the Cretaceous of Kansas in 1888. Another valuable item of the collection is the extensive series of casts of fossil vertebrates given by W. S. Stratton. These casts include such forms as the Ichthyosaurus, Archæopteryx, Glyptodon, Dinotherium head, Elephas heads, Mastodon head and tusks, Megatherium and restorations of the Colossochelys, Plesiosaurus, Mammoth, and other forms.

ZOOLOGY.—The collections of Invertebrate Zoology occupy a series of table cases along the south side of the room. They comprise representatives of the different groups, such as the Protozoa, Cœlenterata, Mollusca, etc. These have been recently rearranged and

provided with descriptive labels which it is hoped will be found useful to students.

A representative series of the Myxomycetes or Mycetoza of Colorado, collected by Dr. Sturgis and Mr. Ellsworth Bethel, have recently been added to these collections, and Professor Schneider has presented a large series of the Butterflies and Moths of Colorado mounted in Denton tablets.

Vertebrates are well represented by the large natural history collection received through the generosity of W. S. Stratton. It contains 20 species of fishes, among which are the blue-shark, a few ganoids, and several curious tropical forms. Among the 23 species of reptiles, the most important are the Indian crocodile, python, iguana and the gila monster. The collection includes 442 species of birds, including such interesting forms as the ostrich, cassowary, Austrian crane, apteryx, and Argus pheasant. The ornithology of all parts of the world is represented by the more striking forms. The mammals number 170 and include a group of mounted orangutans, a group of all known genera of marsupials, the Indian elephant, rhinoceros, nyghau, polar bear, and a complete mounted skeleton of a large whale.

Through the generosity of General Wm. J. Palmer, the Museum has acquired the unrivalled collection of Colorado and other birds accumulated during the past thirty-five years by Mr. C. E. Aiken of this city. About one hundred and fifty of these have thus far been mounted for exhibition and are displayed in one of the wall cases on the south side of the Museum. The rest of the collection is in the form of skins, and is arranged in two large cabinets in the director's room; it is available for study by anyone who wishes to make use of it. All the birds are fully labeled and a complete card catalogue has been prepared.

A small collection of birds' eggs, mainly the gift of Ivan C. Hall, of the class of 1908, has been placed on exhibition.

A commencement has also been made of a collection of Colorado Mammals. This now contains over fifty mounted specimens of local species, and additions are being made. These are exhibited in the case next to the Aiken birds.

A study collection of mammal skins has also been added. These are in a cabinet in the Director's room.

A collection of Colorado fishes, amphibians, and reptiles, has been begun. They are in a show case in the large hall.

MINERALOGY.—The collection in mineralogy occupies the north side of the room and includes 1,450 specimens of minerals, common, commercial, and rare.

ETHNOLOGY is represented by a series of casts of skulls and

brains of different peoples. The series also contains 125 masks of South Sea Islanders and 25 framed pictures of different races.

ANTHROPOLOGY.—The anthropological department contains a large amount of pottery from Missouri, New Mexico, and Peru; the Taos Pueblo, Pueblo Bonito, and DeChelly ruins are reproduced in miniature. The Bixby-Lang and Deane collections from the Cliff Dwellings were received through General Palmer. The Bixby-Lang collection was made in Southeastern Utah and Northern Arizona, during the years 1897-'98. The collection includes almost 500 specimens of pottery, implements, skulls, and mummies. The specimens of pottery are exceptionally well preserved. The Deane collection was made in Western New Mexico and includes over 800 specimens of pottery, implements, skulls, and idols.

There is also a collection of Egyptian antiquities received from the Egyptian Exploration Society, of which Colorado College is a member.

RELIGIOUS LIFE.

The College is distinctly Christian, and recognizes character as the highest attainment. It is unsectarian in its management. Entering students are asked what their denominational affiliations are, and what churches in the city they desire to attend; lists are sent to the pastors of these churches, who seek out the students and bring about them the influence of church homes. Morning prayer is held in the chapel daily, attendance being required of all students. Every Friday the President discusses questions bearing directly on student life.

In September, 1911, the College Vesper Service was established. It is held every Sunday afternoon during term time at five o'clock. A vested choir of twenty-four voices leads in the music under the direction of Mrs. J. S. Tucker. The attendance of students is not required, but there is a large voluntary attendance.

The list of preachers for 1913-'14 is as follows:

Reverend Orrin W. Auman.

Reverend F. T. Bayley, D. D.

Reverend Gibson Bell.

The Right Reverend Benjamin Brewster, D. D.

Professor S. H. Clark, Ph. B.

R. W. Corwin, M. D.

Reverend Ozora S. Davis, D. D.

Reverend C. Telford Erickson.

Reverend Samuel Garvin, D. D.

The Very Reverend H. Martyn Hart, D. D.

Professor Samuel A. Lough, Ph. D.

The Right Reverend Francis J. McConnell, D.D., LL.D.

Professor Clifford H. Moore, Ph. D.

Reverend A. H. Chipman Morse.
Harry P. Packard, M. D.
Mr. A. D. Parker.
Dean Edward S. Parsons, B. D., Litt. D.
Reverend William W. Ranney.
President William F. Slocum, D. D., LL. D.
Reverend Merle N. Smith, D. D.
Reverend James H. Spencer.
Reverend Arthur N. Taft.
Reverend Allan A. Tanner.
Reverend Frank H. Touret.
Reverend George B. VanArsdale.
Reverend Clarence F. Weyer.

The Young Men's and the Young Women's Christian Associations are represented by strong branches, under whose auspices are conducted mission work at home and abroad, classes for Bible study, religious services in neighboring villages, socials, and work among the boys of the town. Religious meetings are held every week. The Associations send delegates to the state and national conferences.

The Student Volunteer movement is represented. Of the former members of the band, some are continuing in other institutions their preparation for the foreign field, and others are already actively engaged in missionary work.

At the beginning of the College year, members of the Associations meet all trains and welcome new students.

STUDENT PUBLICATIONS.

The Tiger, a semi-weekly newspaper, is issued by an editorial board composed of College students. An annual, *The Pikes Peak Nugget*, is published by the Junior class. A *Handbook* of information is issued at the beginning of the College year by the Y. M. C. A.

LITERARY SOCIETIES.

The Apollonian Club, the Pearsons Literary Society, and the Ciceronian Club composed of young men; the Minerva Society, the Contemporary Club, and the Hypatia Society, composed of young women, hold weekly meetings for debate and other literary work.

THE ENGINEERS' CLUB.

The Engineers' Club of Colorado College was organized in the fall of 1910, and is the outgrowth of the Chemical Club. Engineering students of the three upper classes are eligible as members, and

Freshmen engineering students are eligible as associate members. Meetings are held in Coburn Library every Friday evening; once a month an engineer or business man appears before the club giving a talk on his special line; on the other Friday evenings the members present papers and have discussions on engineering problems, current events, and the like. Thus the club not only affords the opportunity for its members to hear talks by successful engineers, but also gives them practice in debating and presenting subjects before an audience.

FORESTERS' CLUB.

A Foresters' Club meets fortnightly during the Winter term to consider current events in forestry and discuss papers of professional interest.

THE ASSOCIATED STUDENTS OF THE COLORADO COLLEGE.

For the management of all activities in which the whole student body is interested, an organization composed of all registered students has been formed under the name of "The Associated Students of The Colorado College." This organization was created in the spring of 1909. Its officers, elected annually on the second Friday in May, consist for 1913-'14 of the following, who constitute the Student Commission:

President—Everett B. Jackson, '14.

Vice-President—Katherine Copeland, '14.

Secretary—Mary Adams, '15.

Treasurer—Elbert Wade, '15.

Editor of The Tiger—Fred M. Gerlach, '14.

Manager of Debating—Reginald M. Atwater, '14.

Senior Member Athletic Board—John L. Herron, '14.

Junior Member Athletic Board—Ralph L. Hall, '15.

Junior Member Tiger Board—Judson T. Williams, '15.

Alumni Member Athletic Board—Herbert G. Sinton, '11.

Junior Woman Representative—Statie Erikson, '15.

Under Class Representative—Frank Hall, '16.

ORATORICAL AND DEBATING CONTESTS.

All contests in public speaking are in charge of the Department of Public Speaking and the Manager of Debating, a member of the Student Commission. Two intercollegiate debates are held during the second half-year, and there is an annual public debate between representatives of the Apollonian Club and Pearsons Society.

PHYSICAL TRAINING.

The open climate of Colorado Springs makes outdoor sports possible and attractive throughout the year. Tennis is played all winter; track and baseball practice may be begun as soon as the football season is over.

Football, baseball, basketball, and track athletics for the men, are managed by the Colorado College Athletic Association. The interests of the Association are controlled by a Board, consisting of Mr. Park, Mr. Motten and Mr. Rothgeb from the faculty; Messrs. L. W. Bortree, M.D., and Herbert George Sinton from the alumni, and Messrs. John Lawrence Herron and Ralph Lyman Hall from the students. Dr. Bortree is President of the Board, Mr. Park is Vice-President, and Mr. Motten is Secretary. Mr. Howard Moore is Treasurer of the Board.

In 1898 the Athletic Association laid out the Washburn Athletic Field, named in honor of the late Philip Washburn. For this purpose, the natural amphitheatre in the rear of the college buildings, facing the mountains, was used. About five acres of ground were leveled, and grand stands, seating nearly 2,000, erected. The field contains a football field, two baseball diamonds, a quarter-mile cinder track, and a two hundred and twenty yard straight-away track. For adaptation to its purposes, there is no more complete and satisfactory college athletic field in the West. Mr. Claude J. Rothgeb is the Director of Athletics.

Physical education for young women is in charge of Miss Sarah Russell Davis. Upon entering College each student is examined by the college physician and measured by the instructor, and information is solicited concerning her habits and general health. Three hours a week are required of all students, special exercise being prescribed for students showing defects of posture or physical disability to do the required amount of work. No young woman will be given a degree who has not satisfied the requirements of this department. An outdoor gymnasium with a basketball field makes it possible to do much in the open air.

Full bloomers of dark blue serge and white sailor blouses are required. Students should consult the instructor before procuring their shoes.

PHI BETA KAPPA.

A charter of the Phi Beta Kappa Society was granted to Colorado College in 1904. The object of the Society is the promotion of scholarship and friendship among students and graduates of American colleges. The members of the Society are elected primarily from the best scholars of the graduating classes of the College; secondly from the graduates of the College whose work after

graduation entitles them to such honor; and lastly from any persons distinguished in letters, science, or education. In addition to scholarship, power of leadership and good moral character, are the qualifications for membership.

Recently the rules of election to membership have been modified somewhat. Two members are elected from each Junior class. In the Senior year additional elections are made, increasing the total number to not more than one-seventh of the regular members of each graduating class in the College of Arts and Sciences. No student is eligible who does not take his Junior and Senior years in Colorado College.

THE COLORADO COLLEGE PUBLICATION.

Under this title is now included the scientific publication formerly issued as "COLORADO COLLEGE STUDIES," as well as the announcements of the various departments of the College, the annual catalogue, etc. This publication appears every six weeks during the academic year.

The following have been published during the academic year 1913-'14:

Science Series:

- VOL. XII. No. 10. Parasite Fauna of Colorado.—*Maurice C. Hall.*
 No. 11. A Guide to the Botanical Literature of the Myxomycetes from 1875 to 1912.—*William C. Sturgis.*
 No. 12. The Myxomycetes of Colorado II.—*William C. Sturgis.*

Social Science Series:

- VOL. XII. No. 4. Phi Beta Kappa Address: The Academic Career.—*George Lincoln Hendrickson.*
 No. 5. Baccalaureate Sermon.—*William F. Slocum.*
 No. 6. Historical Address: A Liberal Education.—*William T. Foster.*
 No. 7. Address at Alumni Dinner.—*David F. Matchett.*

Language Series:

- VOL. II. No. 29. The Pikes Peak Region in Song and Myth.—*Elijah Clarence Hills.*

General Series:

- No. 65. Views of Colorado College.
 No. 67. Catalogue of Colorado College.

COLLEGE LECTURE COURSE.

The College Lecture Course, established in 1894, has been continued annually since that time. These lectures have been given by members of the College Faculty on literary, scientific, and popular topics in Colorado Springs, and occasionally in other cities. In the spring of 1913, the course consisted of the lectures of Professor George Herbert Palmer, Exchange Professor from Harvard University, and the readings of Professor S. H. Clark of the University of Chicago, and one lecture by Mr. William B. Patty, under the auspices of the Engineers' Club. Professor Palmer gave two courses, one consisting of twelve lectures upon "The Problem of Duty," the second of eight lectures on the following English Poets:

Chaucer and Spenser.

George Herbert.

Alexander Pope.

William Wordsworth.

Alfred Tennyson.

Robert Browning.

Professor Clark gave readings as follows:

The Melting Pot.—*Zangwill.*

Cyrano de Bergerac.—*Rostand.*

The Pigeon.—*Galsworthy.*

The Magistrate.—*Pinero.*

Three Irish Plays.

Lohengrin.

Henry V.

Mr. Patty lectured on Liquefied Air, Radium, and Wireless Telegraphy.

OFFICERS OF THE ALUMNI ASSOCIATION.

CLARENCE R. ARNOLD.....	President
WILLIAM W. CORT.....	First Vice-President
NETTIE M. CAREY.....	Second Vice-President
CHARLES M. WEISER.....	Third Vice-President
SPERRY PACKARD.....	Fourth Vice-President
LEONARD M. VAN STONE.....	Fifth Vice-President
LENORE POLLEN.....	Secretary
GLENN A. BOWERS.....	Treasurer

C. R. ARNOLD

L. W. BORTREE

W. W. CORT

GLENN BOWERS

ELLA L. TAYLOR

MERLE McCLINTOCK

} Executive Committee

EXPENSES.

Tuition by the year (except in department of Forestry).....\$50.00

Tuition in Department of Forestry:

Regular course for full year (ten months)..... 60.00

Summer Course alone (four weeks)..... 12.00

Students who register for less than eight hours of work pay the usual entrance fees, and \$10.00 for each half-year course. Anyone wishing to attend lectures or recitations without receiving credit upon the College records may secure the privilege of such attendance on the payment of \$5.00 for each half-year course.

Matriculation fee..... 5.00

(From the above-named fees there is no rebate in case of withdrawal or dismissal.)

Athletic and "Associated Students" fee..... 5.00

Board by the half-year in halls (for young women)..... 75.00

Board in young men's clubs, by the week.....\$4.00 to 5.00

Board in the Spring vacation, by the week..... 4.00

Rooms, warmed, furnished, and lighted, by the year, for each occupant.....\$40.00 to 80.00

The standard rental is \$80. The number of rooms under that price is very limited. Application should be made early. Rooms are rented by the year, and will be retained for incoming students only when the application is accompanied by a deposit of \$5.00. This fee will be credited on the bills for room rent, and will be refunded only in case the room is given up by September first.

No young woman will be received into the halls who is not of full college rank, who is less than sixteen years of age, and who is not taking at least fifteen hours' work or its equivalent. Young women from out of town are required to live on the campus.

The women's residence halls are usually closed during the Christmas recess for cleaning and repairs.

Young men who room off the campus can obtain rooms at prices similar to those charged by the College.

Students who room in the College residences are required to furnish towels, bed linen, and blankets.

Nurse's fee (for young women only); see p. 99.....\$5.00

Fees of College physician:

Office consultation..... .50

Visits to rooms..... 1.00

Infirmary fee, (including meals), a day..... 1.00

For prolonged illness and in cases of contagious diseases, a

special nurse is employed, and the expenses are charged to the patient.

The following is an estimate of the necessary expenses for the college year (not including matriculation fee, nurse's fee, cost of text-books, laundry, and incidentals):

Tuition, \$25 per half-year.....	\$ 50.00	\$ 50.00
Room rent, \$20 to \$40 per half-year.....	40.00	80.00
Board, \$75 per half-year.....	150.00	150.00
	<hr/>	<hr/>
	\$240.00	\$280.00

In addition to these items, fees are charged for the use of apparatus and materials in the various laboratories, as follows: Psychology, p. 46; Physics, p. 71; Chemistry, p. 72; Biology, p. 75; Geology, (Course 2), p. 77; Civil 2, p. 78; Civil 82, p. 82; Field Courses in Surveying, p. 82; Electrical Laboratory, p. 86; Note; Shop, p. 82. (These fees are paid directly to the respective departments at the beginning of each term.)

An additional charge of \$5.00 is made on the last term bill of the Seniors to cover expenses of graduation.

The bills for tuition, room rent and board are issued at the beginning of each half-year, and are payable immediately. Students who withdraw before the end of the term pay full tuition. Students who withdraw less than six weeks before the end of the term pay full board and room rent. No deduction will be made for short absences during the term. In case of withdrawal more than six weeks before the end of the term, half of the room rent and the whole of the amount paid for board for the unexpired portion of the term will be returned to the student. The date of withdrawal is reckoned from the time when official intimation of the fact has been received from parent or guardian.

Remittances should be made by draft or money order.

The degree will not be granted to any student whose college bills are not paid before Commencement.

SCHOLARSHIPS.

The income of the following scholarships is devoted to the aid of worthy students who may need assistance in completing their course, and who, by their scholarship and character, prove themselves worthy of such assistance:

The Thomas Davee Scholarship of \$500, established by the late Mrs. T. V. D. Mitchell, of West Minot, Maine.

The Rice Scholarship of \$700, established by friends of the Rev. Chas. B. Rice, D.D., of Danvers, Mass.

The Currier Scholarship of \$1,000 founded by the late Hon. Warren Currier, of St. Louis, Mo.

The Edwards Scholarship of \$500, given by the Congregational Church of Wellesley Hills, Mass.

The Mary Caroline Quincy Scholarship of \$500, given by the late George Henry Quincy, of Boston, Mass.

The Lawrence Myers Scholarship of \$1,000, and the Lucy Platt Myers Scholarship of \$1,000, given by Mrs. Lætitia M. Myers, of Plainfield, New Jersey.

The Fay Scholarship of \$1,000, founded by the late Eliza A. Fay, of Boston, Mass.

A Scholarship of \$1,000 given by Mr. William F. Richards of Colorado Springs, through the Woman's Educational Society of Colorado Springs.

The Willard B. Perkins Scholarship of \$7,000. The second Willard B. Perkins Scholarship of \$7,000. These two scholarships were given by the late Willard B. Perkins, of Colorado Springs.

The Hawley Scholarship Fund of the Woman's Educational Society, now amounting to about \$10,000, founded by the will of Mrs. Mary R. Hawley, of Baltimore, Md., the annual income of which is used in the payment of scholarships of such young women of the College as the Faculty may recommend, preference being given to daughters of home and foreign missionaries.

The Hawley Scholarship Fund of Colorado College, now amounting to about \$9,000, founded by the will of Mrs. Mary R. Hawley, of Baltimore, Md., the annual income of which is used in the payment of scholarships for such students of the College as the Faculty may recommend who may be fitting themselves for distinctively Christian work.*

The Hawley Memorial Fund, now amounting to about \$9,000, founded by the will of Mrs. Mary R. Hawley, of Baltimore, Md., in memory of her husband, Mr. Martin Hawley, the annual income of which is loaned to "worthy and deserving students of the College, as the Faculty may see proper."

The Strettell Memorial Fund of \$2,000, given by Mrs. Alma G. V. Harrison, of London, England, and General William J. Palmer, of Colorado Springs, in memory of Mr. Arthur E. V. Strettell, Mrs. Harrison's brother, who died in Colorado Springs in 1882. The income of this fund is to be used to aid students suffering from lung troubles.

The Mary G. Slocum Scholarship of \$100 a year, given by the Woman's Educational Society of Colorado College. This scholarship is awarded on the basis of competition to young men of the Junior Class.

The Ruth Danforth Scholarship of \$1,000, established by Mrs. Emma Danforth Wiley, of Colorado Springs.

*Students who desire to have their names considered, must make application.

The Elizabeth C. McAllister Scholarship of \$1,000, established by members of her family.

Several other scholarships are supported by annual subscriptions.

SELF-SUPPORT.—Advanced students of high standing have occasional opportunities for private teaching. Capable and faithful young men can usually find work in town. During the present year the Employment Bureau of the College Y. M. C. A. has secured about 250 positions for students. A limited amount of service in Bemis Hall is offered to young women; this is not often available for first-year students.

PRIZES.

The Hastings Prizes.—The sum of \$1,000 has been given by Mr Frederic R. Hastings, of Colorado Springs, the income of which is to be used in providing prizes for sufficiently creditable theses produced by students in Philosophy 13.

THE WOMAN'S EDUCATIONAL SOCIETY.

This Society was formed in April, 1889, by the women of Colorado Springs. Its purpose, as expressed in its constitution, "is to give physical, intellectual, and spiritual aid to students in any department of Colorado College." This Society built Montgomery Hall, furnished Ticknor and McGregor Halls, and has been of service in many ways to the College. It endeavors to help the members of the Faculty in their personal work for students, especially those who are self-supporting.

First.—Loans may be made to students who have been in the College for one half-year and are recommended by the Faculty as in every way deserving of such aid.

Second.—No student shall be allowed to incur an indebtedness to the Society of more than \$300.00.

Third.—Students may receive loans without interest until their connection with the College ceases; after that time their notes shall draw interest at 4 per cent.

For the scholarships within the gift of the Society, see p. 121

The officers for the current year are:

President—Mrs. William F. Slocum.

First Vice-President—Mrs. M. C. Gile.

Second Vice-President—Mrs. F. E. Brooks.

Third Vice-President—Mrs. L. J. Skelton.

Recording Secretary—Miss Marianna Brown.

Corresponding Secretary—Mrs. E. C. Hills.

Treasurer—Mrs. Edward S. Parsons.

Auditor—Willis R. Armstrong.

HOSPITAL FUND.

The Trustees of the Bellevue Sanitarium have given to the College nearly \$4,000 as the nucleus of a hospital fund for the students.

THE NEEDS OF THE COLLEGE.

Colorado College, never more truly than today, has great and pressing needs. Its growth during the last fifteen years has been steady and rapid, and its friends have generously assisted in helping to meet its constantly enlarging opportunity. If it is to do the work which legitimately belongs to it and have its part in meeting the educational demands of the great section of the country in which it is located, if it is to provide a thorough and broad training under positive Christian influences for those who are coming to it in constantly increasing numbers, not only from Colorado, but from the entire country, it must have in the immediate future larger resources than those upon which it has been obliged to rely during the last few years.

Among the pressing needs are the following:

General Endowment.—For the last ten years the College has been doing a work equal in amount and quality to that done by older eastern institutions possessing a much larger endowment. In consequence each year a deficit has had to be faced. A much larger sum than it has at present must be provided if the College is to go forward to fill its place in the educational life of the country.

Professorships.—It is hoped that one form in which this larger endowment will be bestowed is in the provision of permanent funds for individual professorships.

Funds for the Library.—The library has only a few hundred dollars of permanent funds. It must rely for increase upon gifts and upon purchases made out of current expense funds to meet the absolute requirements of the different departments. There is an imperative need for money to be used at once in the filling of gaps in the material the library already possesses, and also for permanent funds from which additions may be regularly made in accordance with the varied intellectual needs of the College.

Special Funds for Scientific Research.—Money to be devoted to scientific work in special lines is very greatly needed. The opportunities of Colorado College in this direction are unusual, because of the geographical, meteorological, and geological situation. The attention of those interested in the advancement of science is earnestly called to this fact.

Funds for the Department of Engineering.—This department of the College needs a considerable sum of money to be immediately expended in the proper development of its work and also a large

endowment fund to secure its stability and future growth. Large gifts bestowed for these ends will directly aid in the development of the rich resources of Colorado and the adjoining mountain states.

Scholarships.—The Trustees desire to emphasize the fact that many young people in a new country are obliged to earn their education by hard and self-denying work. Colorado College still needs a large addition to her scholarship funds. Money thus applied tends directly to the profit of the individual and of the country.

Fellowships.—It would be of great value in developing higher standards of scholarship if several graduate fellowships in various departments could be established.

Infirmary.—The Infirmary in Ticknor Hall, which is available for young women only, is inadequate to the growing needs of the College. There should be provided a separate building, in which contagious diseases can be cared for, as well as ordinary cases of illness. A fund has been started for the endowment of a cot, for use in case of illness among students who are working their way. Additions to this fund are an urgent need.

FORM OF BEQUEST.

Those who intend to devise property to Colorado College, or to the Woman's Educational Society, are requested to employ one of the following Forms of Bequest:

"I hereby give, devise, and bequeath, unto The Colorado College of Colorado Springs, Colorado, the sum of.....Dollars."

"I hereby give, devise, and bequeath, unto the Woman's Educational Society of Colorado College, of Colorado Springs, Colorado, the sum of.....Dollars."

If property other than money is willed, the form should be correspondingly varied.

Commencement, 1913

Award of Honors

HIGH HONORS.

Mollie Hanowitz, '13	May Louise Greene, '14
Gertrude Eloise Shellabarger, '13	Sarah Blakely Ingersoll, '14
Dorothy Cory Stott, '13	Pearl May Brennicke, '15

HONORS.

Charles Averette Carson, Jr., '13	Elizabeth Chase Sutton, '14
Leona Violet Stuke, '13	Helen Bourquin, '15
May Bel Thompson, '13	Marjorie May Snyder, '15
Everett Banfield Jackson, '14	Frank Edward Evans, '16
Arthur Fisher Rose, '14	Edith Banfield Jackson, '16
Frederic Putnam Storke, '14	Bertha Mereia Pick, '16

Award of Scholarships

PERKINS SCHOLARS.

William Chenault Argo, '15	Pearl May Brennicke, '15
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MARY G. SLOCUM SCHOLAR.

Percy Laban Jones, Jr., '14.

Award of Prizes

SWEET ORATORICAL PRIZE.

1st prize—Helen Margaret Rand, '13.
2nd prize—Karle Weller, '14.

PHI BETA KAPPA ELECTIONS.

CLASS OF 1913 AND 1914.

Charles Averette Carson, Jr., '13	Arnold Horrex Rowbotham, '13
Everett Banfield Jackson, '14	Gertrude Eloise Shellabarger, '13
Myrth Earnestine King, '13	Frederic Putnam Storke, '14
Thomas Lynch, Jr., '13	Dorothy Cory Stott, '13
Mary Publow, '13	Leona Violet Stuke, '13
Lorena Viola Woltzen, '13.	

Degrees Conferred, Commencement, 1913

DEGREES IN COURSE.

MASTER OF ARTS.

Norton, Ethel Clare

Rider, Hixie Mildred

MASTER OF FORESTRY.

Snider, Paul Hustead

BACHELOR OF ARTS.

Magna Cum Laude.

Leora Mana Foster

Gertrude Eloise Shellabarger

Mollie Hanowitz

Dorothy Cory Stott

Myrth Earnestine King

Leona Violet Stukey

Lorena Viola Woltzen

Cum Laude.

Lena Fay Mar Baker

Warren Clark Jones

Charles Averette Carson, Jr.

Thomas Lynch, Jr.

Robert Morris Copeland

Mary Publow

Helena Violet Hopper

Arnold Horrex Rowbotham

Baker, Anne Mildred

Lamb, Letitia Ellen

Bassler, Ray Herbert

Lendrum, Mattie Vye

Bateman, Lillian Grace

Maxwell, Edna Miriam

Baxter, LeOra Agnes

Moberg, Carl Ephraim

Bennett, Herbert Alden

Moore, Etta Naomi

Bowers, Glenn Alwyn

Neuswanger, William Ernest

Boyes, Dana Lell

Norton, Florence Evelyn

Burger, Carrie Idabell Douglas

Peirson, Florence

Cross, Bertram Josiah

Rand, Helen Margaret

Fezer, Marion

Shaw, John Scranton

Gleason, Ethel Bethana

Shaw, Lloyd Leo

Golden, Abram Lee

Sheehan, John Edward

Graves, Lucy Ethel

Sinton, James Joseph

Gregg, Abel Jones

Sisco, Dwight Lewis

Haines, Marion Huntington

Stott, Dorothy Cory

Hall, Octavia Irene

Sullivan, Vera Faye

Havens, Leon Clive

Sundquist, Ada Mabel

Hughes, Josiah

Thompson, Laura Ellen

Kampf, Cora Coleman

Thompson, May Bel

Kimball, Milton Samuel

Thornell, Joseph Browning

Klein, Rudolph

True, Katherine Goodrich

Walsh, Mary Bedelia
Williams, Lorraine Eliza
Winchell, William Beardsley

Woltzen, Lorena Eliza
Woollen, Gladys Caroline
Wright, Newton Bateman

BACHELOR OF MUSIC.

Wharton, Jessie Catherine

BACHELOR OF SCIENCE IN CIVIL ENGINEERING.

Bailey, Paul Shields
Lippert, Carlton Lorenzo
Wilkinson, Charles Roswell

Nordeen, Carl Edward
Shapcott, Wallace Gilbert

BACHELOR OF SCIENCE IN CIVIL ENGINEERING AND IRRIGATION.

Copeland, Robert Morris

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING.

Jones, Warren Clark

FOREST ENGINEER.

Black, Claud Raymond
Floyd, Joseph Ellingwood

Steuart, Charles
Vandemoer, Herbert Robinson

Students

GRADUATE STUDENTS.

CANDIDATES FOR THE DEGREE OF MASTER OF ARTS.

Guy Wendell Clark, A.B. Colorado College, '12.	Colorado Springs. 318 E. St. Vrain St. Chemistry.
Mary Susan Detmoyer, A.B. Colorado College, '11.	Denver, Colo. Denver, Colo. English.
Leon Clive Havens, A.B. Colorado College, '13.	Colorado Springs. 707 E. Columbia St. Physiology.
Dwight Lewis Sisco, A.B. Colorado College, '13.	Colorado Springs. 1301 N. Weber St. Physiology.

CANDIDATE FOR THE DEGREE OF CIVIL ENGINEERING.

John Burgess, B.S. in C.E. Colorado College, '10.	Cañon City, Colo. Cañon City, Colo.
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NOT CANDIDATES FOR A DEGREE.

Glenn Alwyn Bowers, A.B. Colorado College, '13.	Colorado Springs. 1125 N. Nevada.
Hemenway, Addie, A.B. Colorado College, '11.	Colorado Springs. 1342 N. Nevada
Ernestine Parsons, A.B. Colorado College, '08.	Colorado Springs. 825 N. Weber St.
Marie E. Roberts, A.B. Colorado College, '08.	Colorado Springs. 1503 N. Weber St.
Lois Ellett Smith, A.B. Colorado College, '12.	Colorado Springs. McGregor Hall.
Jessie Catherine Wharton, B.M. Colorado College, '13.	Colorado Springs. 14 S. Wahsatch.

SENIORS.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Adams, Frances Helen	Ft. Collins, Colo.	Bemis Hall.
Adams, Mary Feimster	Steamboat Springs.	Bemis Hall.
Alexander, Margaret	La Veta, Colo.	Bemis Hall.
Allen, Arthur Jones	Grand Junction, Colo.	930 N. Weber.
Anderson, Charlotta	E. Las Vegas, N. M.	Bemis Hall.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Anderson, Conrad Her- man (E)	<i>Colorado Springs.</i>	1129 Washington Ave.
Anson, Irene	<i>Denver, Colo.</i>	Bemis Hall.
Atwater, Reginald Myers	<i>Colorado Springs.</i>	730 E. Boulder.
Ball, Grace Elizabeth	<i>Colorado Springs.</i>	410 N. Weber.
Barnes, Ernest Winfred	<i>New York City.</i>	Hagerman Hall.
Barr, Orpha Alta	<i>La Jara, Colo.</i>	Bemis Hall.
Berryhill, Robert Hamilton	<i>Colorado Springs.</i>	324 E. Yampa.
Brooks, Marian Elotia	<i>Colorado Springs.</i>	1820 Washington Ave
Cajori, Florian Anton	<i>Colorado Springs.</i>	1119 Wood.
Cameron, Alan Fuller	<i>Denver, Colo.</i>	Hagerman Hall.
Carson, Anne Bryan	<i>Kissimme, Florida.</i>	Bemis Hall.
Cassidy, Helen Margaret	<i>Denver, Colo.</i>	Bemis Hall.
Copeland, George Holliday	<i>Greeley, Colo.</i>	Hagerman Hall.
Copeland, Katherine Earl	<i>Colorado Springs.</i>	2110 N. Cascade.
De Rusha, Helen Emma	<i>Colorado Springs.</i>	422 E. Cache la Poudre
Dilts, Lucile Winifred	<i>Ft. Morgan, Colo.</i>	Bemis Hall.
Dupertuis, John	<i>Chehalis, Wash.</i>	1806 Wood.
Fukuya, Shoan Masuzo	<i>Colorado Springs.</i>	720 N. Cascade.
Gates, Harriet Emily	<i>Sapulpa, Okla.</i>	Bemis Hall.
Gerlach, Frederick Matthew	<i>Cañon City, Colo.</i>	Hagerman Hall.
Gowdy, Helen	<i>Colorado Springs.</i>	Nob Hill.
Gibbs, Lillian May	<i>Trinidad, Colo.</i>	Bemis Hall.
Greene, May Louise	<i>Colorado Springs.</i>	411 E. Columbia.
Gregg, Harold William	<i>Longmont, Colo.</i>	930 N. Weber.
Griffith, Maude May	<i>Palisade, Colo.</i>	Bemis Hall.
Gum, Edgar Haddon	<i>Miller, Mo.</i>	307 N. Fourth St., Colorado City.
Harlan, Mabel Margaret	<i>Colorado Springs.</i>	920 Cheyenne Road.
Harter, Charles Arthur	<i>Loveland, Colo.</i>	1319 N. Nevada.
Holm, Dagmar Marguerite	<i>Amo, Colo.</i>	512 E. Cache la Poudre
Ingersoll, Sarah Blakeley	<i>Denver, Colo.</i>	Bemis Hall.
Jackson, Everett Banfield	<i>Colorado Springs.</i>	228 E. Kiowa.
Jacobs, Sara Judith	<i>Des Moines, Iowa.</i>	Bemis Hall.
Jewell, Minna Ernestine	<i>Colorado Springs.</i>	Bemis Hall.
Johnston, Charles Morton (E)	<i>Hooper, Colo.</i>	1122 N. Cascade.
Jones, Percy Laban	<i>Beulah, Colo.</i>	1111 Wood.
Kim, Frank Yongju	<i>Chunju, Korea.</i>	Hagerman Hall.
Knous, Elizabeth	<i>Greeley, Colo.</i>	Bemis Hall.
Koch, Edward Harry	<i>Aspen, Colo.</i>	919 N. Weber.
Lacy, Lester Daniel	<i>Wakita, Okla.</i>	608 N. Nevada Ave.
Lennox, Agnes	<i>Colorado Springs.</i>	1339 N. Nevada Ave.
Leonard, Maude Webster	<i>Manitou, Colo. •</i>	Bemis Hall.
Lewis, Raymond	<i>Fowler, Colo.</i>	1125 N. Nevada Ave.
Lewis, Rofena M.	<i>Cañon City, Colo.</i>	Bemis Hall.
Lloyd, Robert (E)	<i>Colorado Springs.</i>	1528 N. Nevada Ave.
McCaffery, Ellen Cecelia	<i>Colorado Springs.</i>	11 W. Boulder St.

NAME.	HOME ADDRESS.	CITY ADDRESS.
McCreery, Dorothy	<i>Greeley, Colo.</i>	Bemis Hall.
McReynolds, Leila Belle	<i>Rutledge, Mo.</i>	1532 N. Nevada Ave.
Madden, Dorothy Winifred	<i>Pueblo, Colo.</i>	Bemis Hall.
Miller, Raymond Edward	<i>Parkersburg, W. Va.</i>	Hagerman Hall.
Moye, Ralph Albert	<i>Colorado Springs.</i>	315 E. Uintah.
Mullaney, Frances Josephine	<i>Colorado Springs.</i>	741 E. Cache la Poudre
Park, Nelson Renfrew	<i>Longmont, Colo.</i>	Hagerman Hall.
Phillips, Martha Elizabeth	<i>La Junta, Colo.</i>	Bemis Hall.
Powell, Edith Antonetta	<i>Yampa, Colo.</i>	Bemis Hall.
Rose, Arthur Fisher (E)	<i>Colorado Springs.</i>	1007 N. Wahsatch.
Rose, Roy Michael (E)	<i>Colorado Springs.</i>	1820 N. Corona.
Schmitt, Elizabeth Delphine	<i>Colorado Springs.</i>	1336 N. Weber.
Shelden, Jessie Marguerite	<i>Colorado Springs.</i>	321 W. Kiowa.
Sheppard, Ruth Foxworthy	<i>Eaton, Colo.</i>	Bemis Hall.
Stanfield, Maude Elizabeth	<i>Paris, Ill.</i>	Bemis Hall.
Storke, Frederic Putnam	<i>Auburn, N. Y.</i>	27 W. Cache la Poudre
Street, Claudius Augustus	<i>Linville Falls, N. C.</i>	1806 Wood Ave.
Strieby, Maurice Edward	<i>Colorado Springs.</i>	805 N. Cascade.
Sutton, Elizabeth Chase	<i>Denver, Colo.</i>	Bemis Hall.
Wakefield, Lucile	<i>Loveland, Colo.</i>	Bemis Hall.
Warren, Helen Frances	<i>Ft. Morgan, Colo.</i>	Bemis Hall.
Watson, Harley Albro	<i>Ft. Collins, Colo.</i>	1122 N. Cascade.
Weller, Karle Forest	<i>Eaton, Colo.</i>	1122 N. Cascade.
Whittenberger, Gladys Mae	<i>Colorado Springs.</i>	1911 N. Tejon.
Willson, Mary Louise	<i>Colorado Springs.</i>	810 E. Platte.
Wood, Ruth Catherine	<i>Ridgway, Colo.</i>	Bemis Hall.
Woon, Mary Evelyn	<i>Aspen, Colo.</i>	Bemis Hall.
Wray, Harry Clinton	<i>Cañon City, Colo.</i>	930 N. Weber.

JUNIORS.

Adams, Clarence Morrison	<i>Steamboat Springs, Colo.</i>	Hagerman Hall.
Argo, William Chenault	<i>Colorado Springs.</i>	School for Deaf and Blind
Armstrong, Dorothy	<i>Ft. Collins, Colo.</i>	McGregor Hall
Bartlett, Agnes Griswold	<i>Colorado Springs.</i>	2220 N. Nevada Ave.
Bates, Emma Ruth	<i>Colorado Springs.</i>	22 N. Thirteenth St.
Berwick, Beatrice Marion	<i>Colorado Springs.</i>	429 S. Nevada Ave.
Border, Chauncy Abraham	<i>Strasburg, Ohio.</i>	Hagerman Hall,
Bourquin, Helen	<i>Colorado Springs.</i>	926 N. Wahsatch.
Bower, Marie	<i>Guthrie, Okla.</i>	2012 N. Tejon.
Brennicke, Pearl May	<i>Colorado Springs.</i>	Ticknor Hall.
Brooks, Eva	<i>Steamboat Springs, Colo.</i>	Ticknor Hall.
Brown, Olive	<i>Westfield, Ind.</i>	McGregor Hall.
Bruce, Charles Elbert	<i>Pawnee Rock, Kan.</i>	1611 N. Royer.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Brunner, Henry Harris (E)	<i>Colorado Springs.</i>	112 S. Seventh St.
Carley, Maurine	<i>Cheyenne, Wyo.</i>	McGregor Hall.
Catren, Lillian	<i>Georgetown, Colo.</i>	Ticknor Hall.
Clark, Leon Benjamin	<i>Ft. Collins, Colo.</i>	Hagerman Hall.
Clutter, Harry Stephen	<i>Amorita, Okla.</i>	319 N. El Paso.
Crampton, John Heugh (E)	<i>Colorado Springs.</i>	1614 N. Tejon.
Crutcher, Hester Brandenburg	<i>Salida, Colo.</i>	Ticknor Hall.
Davis, Harold Thayer	<i>Montrose, Colo.</i>	Hagerman Hall.
Daw, Arthur Henry (E)	<i>Colorado City, Colo.</i>	915 Jefferson Ave.
Dennis, George Wesley	<i>Loveland, Colo.</i>	1122 N. Cascade.
Emery, Charles Francis	<i>Colorado Springs.</i>	1420 N. Nevada Ave.
Erikson, Statie Estella	<i>Ouray, Colo.</i>	McGregor Hall.
Ferril, Harriet Peckham	<i>Denver, Colo.</i>	McGregor Hall.
Forsee, Eleanor	<i>Kutch, Colo.</i>	329 E. Cache la Poudre
Gardner, Helen	<i>Kirksville, Mo.</i>	McGregor Hall.
Gebhardt, Glenn Leslie (E)	<i>Cañon City, Colo.</i>	Hagerman Hall.
Gilmore, William Maynard Jr.	<i>Pueblo, Colo.</i>	618 N. Weber.
Greenlee, William John	<i>Steele, Ohio.</i>	112 E. Dale St.
Grimsley, Richard Elmo	<i>Lexington, Ill.</i>	1122 N. Cascade.
Guy, Ellsworth Lin	<i>Montrose, Colo.</i>	930 N. Weber.
Hadley, Edna Margaret	<i>Colorado City, Colo.</i>	131 Monroe Ave.
Hall, Horace Edward (E)	<i>Colorado Springs.</i>	1440 Wood Ave.
Hall, James Smith	<i>Rocky Ford, Colo.</i>	928 N. Weber.
Hall, Ralph Lyman	<i>Denver, Colo.</i>	1122 N. Cascade.
Hemenway, Florence Louise	<i>Colorado Springs.</i>	315 N. Fourth St.
Hopkins, Guy Huskinson	<i>Grand Junction, Colo.</i>	Hagerman Hall.
Howland, Wendell Barker (E)	<i>Denver, Colo.</i>	20 E. Dale St.
Johnson, Blanche Juliet	<i>Marne, Iowa.</i>	918 N. Weber.
Jeanne, Paul Andrew (E)	<i>Colorado Springs.</i>	301 Cheyenne Blvd.
Kampf, Frederick William	<i>Colorado Springs.</i>	1125 N. Nevada. Ave.
Kelsey, Ruth Marie	<i>Sterling, Colo.</i>	McGregor Hall.
Latson, Harley (E)	<i>Rocky Ford, Colo.</i>	1324 N. Nevada Ave.
McCoy, Linda Queen	<i>Colorado Springs.</i>	521 S. Tejon.
McCoy, William Charles (E)	<i>Colorado Springs.</i>	521 S. Tejon.
McReynolds, Edna Earl	<i>Rutledge, Mo.</i>	1532 N. Nevada Ave.
Mason, Alice	<i>Greeley, Colo.</i>	Ticknor Hall.
Merwin, Margaret	<i>Bloomington, Ill.</i>	McGregor Hall.
Miller, Clinton VanGiesen (E)	<i>Colorado Springs.</i>	1319 N. Nevada Ave.
Norton, Albert Carl (E)	<i>Colorado Springs.</i>	1020 N. Wahsatch.
Ormes, Jean Harriet	<i>Colorado Springs.</i>	1623 N. Tejon St.
Peterson, Flora Emma	<i>Englewood, Colo.</i>	130 E. Willamette.
Robinson, George DeWitt	<i>Colorado Springs.</i>	124 E. Dale St.
Sasano, Kakutaro Thomas	<i>Okayama, Japan.</i>	24 College Place.
Schroeder, Pearl	<i>Bridgeport, Conn.</i>	Ticknor Hall.
Schuyler, Cornelia Elizabeth	<i>Denver, Colo.</i>	McGregor Hall.
Snyder, May	<i>Colorado Springs.</i>	1307 N. Wahsatch.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Strawn, Bernadine	<i>Albion, Ill.</i>	Ticknor Hall.
Stuntz, Edna Matilda	<i>Colorado City, Colo.</i>	231 Jefferson Ave.,
Townsend, Frances Helen	<i>Golden, Colo.</i>	McGregor Hall.
Tweedy, Ira Otis	<i>Manilla, Iowa.</i>	506 S. El Paso.
Van Stone, Wilfred	<i>Dallas, Texas.</i>	1125 N. Nevada Ave.
Wade, Elbert	<i>Duluth, Minn.</i>	1319 N. Nevada Ave.
Wall, Hampton	<i>Colorado Springs.</i>	1819 N. Nevada Ave.
Wallace, Ruth Margaret	<i>Denver, Colo.</i>	Ticknor Hall.
Wilkin, Dorothy	<i>Cañon City, Colo.</i>	McGregor Hall.
Williams, Judson Thomas	<i>Colorado Springs.</i>	108 E. Boulder St.
Youngman, Florence Angela	<i>Cañon City, Colo.</i>	McGregor Hall.
Zirkle, Mina Belle	<i>Denver, Colo.</i>	McGregor Hall.

SOPHOMORES.

Allward, Charlotte Pearson	<i>Colorado Springs.</i>	218 E. St. Vrain.
Baker, Evelyn	<i>Toledo, Ohio.</i>	Montgomery Hall.
Baker, Samuel William	<i>Colorado Springs.</i>	1319 N. Tejon.
Balch, Harry Hughes	<i>Greeley, Colo.</i>	1125 N. Nevada Ave.
Banta, Martha Marguerite	<i>Colorado Springs.</i>	913 N. Wahsatch.
Barnett, Margaret Elizabeth	<i>Denver, Colo.</i>	McGregor Hall.
Barney, Martin Davis	<i>Colorado Springs.</i>	1828 N. Nevada Ave.
Bartlett, Harriet Morgan	<i>Colorado Springs.</i>	2220 N. Nevada Ave.
Becker, Bernard Carl	<i>Belen, N. Mex.</i>	930 N. Weber St.
Bennett, Hila	<i>Colorado Springs.</i>	301 N. Walnut.
Bernard, Robert James	<i>Denver, Colo.</i>	815 N. Weber.
Black, Charles Miller (E)	<i>Denver, Colo.</i>	1724 Wood Ave.
Blades, Leslie Burton	<i>Colorado Springs.</i>	417 N. Corona.
Bourk, Edna Marie	<i>Colorado Springs.</i>	512 E. Cache la Poudre
Boyd, Helen Shelley	<i>Colorado Springs.</i>	1220 N. Tejon.
Bradley, Margaret Carrington	<i>Denver, Colo.</i>	Montgomery Hall.
Brewer, Edith Lillian	<i>Manzanola, Colo.</i>	Ticknor Hall.
Brooks, Adin Paul (E)	<i>Colorado Springs.</i>	1820 Washington Ave
Brooks, Hattie Estella	<i>Colorado Springs.</i>	1820 Washington Ave
Brown, Robert John	<i>Denver, Colo.</i>	Hagerman Hall.
Caldwell, Blanche Edna	<i>Hastings, Neb.</i>	Montgomery Hall.
Caldwell, Herschel Lyal	<i>Green Ridge, Mo.</i>	307 N. Fourth St.
Cheese, Charles B.	<i>Peyton, Colo.</i>	1002 Colorado Ave.
Cheley, Glen Evan	<i>Colorado Springs.</i>	424 S. Tejon.
Christy, Eleanor Gladys	<i>Colorado Springs.</i>	1419 N. Tejon.
Christy, William Glen	<i>Colorado Springs.</i>	1419 N. Tejon.
Claybaugh, Edwin Parsons	<i>Austin, Colo.</i>	1125 N. Nevada Ave.
Conrad, Edith Louise	<i>Campbell, Mo.</i>	1130 N. Cascade.
Conrad, Mary Salome	<i>Colorado Springs.</i>	117 E. Espanola.
Crissey, Marjorie	<i>Colorado Springs.</i>	227 E. Willamette.
Cross, Eugene Herbert (E)	<i>Glenwood Springs, Colo.</i>	919 N. Weber.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Culp, Hamer	<i>Rocky Ford, Colo.</i>	1122 N. Cascade.
Cunningham, Rachel	<i>Denver, Colo.</i>	McGregor Hall.
Davis, Hazel Rhoda	<i>Colorado Springs.</i>	321 N. Weber.
Davis, William Mack (E)	<i>Monte Vista, Colo.</i>	Hagerman Hall.
Dixon, John Philip	<i>Colorado Springs.</i>	2819 N. Cascade.
Dockstader, Henry Peter (E)	<i>Colorado Springs.</i>	1316 N. Nevada Ave.
Downing, Emma Beatrice	<i>Oil City, Pa.</i>	Ticknor Hall.
Eager, Leonard Prentice	<i>Evansville, Wis.</i>	510 N. Nevada Ave.
Eaton, Elizabeth June	<i>Eaton, Colo.</i>	Montgomery Hall.
Esmiol, Morris Alfred	<i>Denver, Colo.</i>	1125 N. Nevada Ave.
Estabrook, Evelyn	<i>Greeley, Colo.</i>	Montgomery Hall.
Evans, Frank Edward	<i>Colorado Springs.</i>	1912 N. Tejon.
Faulkner, James Edmund (E)	<i>Colorado City, Colo.</i>	631 Colorado Ave.
Flora, Harriette Pearl	<i>Colorado Springs.</i>	2129 N. Nevada Ave.
Fuller, Lillian Eliza	<i>Colorado Springs.</i>	1429 N. Weber.
Gault, Elva Maude	<i>Pueblo, Colo.</i>	Montgomery Hall.
Geissler, Anna Louise	<i>Colorado Springs.</i>	233 N. Franklin.
Gibson, Merle Veron	<i>Denver, Colo.</i>	1211 N. Weber.
Gleason, Ruth	<i>Austin, Minn.</i>	McGregor Hall.
Graves, Cecil Henry	<i>Colorado Springs.</i>	1222 Lincoln Ave.
Greenlee, Lawrence Albert	<i>Bellaire, Ohio.</i>	930 N. Weber.
Hall, Frank Herbert	<i>Colorado Springs.</i>	928 N. Weber.
Hallock, Rachel Maryette	<i>Denver, Colo.</i>	McGregor Hall.
Hamilton, Edith Magill	<i>Canon City, Colo.</i>	Montgomery Hall.
Hasty, Veda	<i>Lamar, Colo.</i>	Bemis Hall.
Harrison, Charles Allison (E)	<i>Colorado Springs</i>	223 E. Platte Ave.
Heald, Helen	<i>Denver, Colo.</i>	McGregor Hall.
Healey, Charlotte Agnes	<i>La Junta, Colo.</i>	Deaf and Blind In- stitute
Heilman, Roy Basil	<i>Monte Vista, Colo.</i>	Hagerman Hall.
Henderson, Isabel Corbin	<i>Sterling, Colo.</i>	McGregor Hall.
Hensley, Mary Olive	<i>Denver, Colo.</i>	Ticknor Hall.
Herron, John Lawrence	<i>Aspen, Colo.</i>	919 N. Weber.
Higgins, Ruth	<i>Pueblo, Colo.</i>	McGregor Hall.
Hill, Florence Mildred	<i>Denver, Colo.</i>	McGregor Hall.
Holm, Agnes Marie	<i>Amo, Colo.</i>	512 E. Cache la Poudre
Holman, Newton Davis (E)	<i>Colorado Springs.</i>	425 E. St. Vrain.
Holmes, Charles Ludswell	<i>Colorado Springs.</i>	315 N. Custer St.
Hubbell, Elizabeth Guion	<i>Colorado Springs.</i>	1915 Wood Ave.
Hutchison, Homer Ross	<i>Colorado Springs.</i>	732 N. Wahsatch.
Hyde, James Francis Clark (E)	<i>New York City.</i>	Hagerman Hall.
Isensee, Arthur Frederick (E)	<i>Delta, Colo.</i>	Hagerman Hall.
Jewell, Lucy Cornelia	<i>Colorado Springs.</i>	Montgomery Hall.
John, Edward Leslie	<i>Florence, Colo.</i>	Hagerman Hall.
Johnson, Elva Caroline	<i>Colorado Springs.</i>	611 N. Wahsatch.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Jones, Gladys Vernna	<i>Florence, Colo.</i>	Montgomery Hall.
June, Perry Ellsworth	<i>Denver, Colo.</i>	730 N. Weber.
Keating, Jerome Hughes	<i>Pueblo, Colo.</i>	731 N. Wahsatch.
Keating, Lawrence Francis (E)	<i>Pueblo, Colo.</i>	731 N. Wahsatch.
Keener, George Herring	<i>Colorado Springs.</i>	426 E. Cache la Poudre
Kingman, Victor Christie (E)	<i>Colorado Springs.</i>	530 N. Nevada Ave.
Kirkwood, Helen Grace	<i>Colorado Springs.</i>	1409 S. Nevada Ave.
Knutzen, Marguerite	<i>Alamosa, Colo.</i>	Ticknor Hall.
Kramer, Harry Stillman (E)	<i>Las Animas, Colo.</i>	1122 N. Cascade.
Landon, Mary Emily	<i>Columbus, Ill.</i>	Ticknor Hall.
Latimer, Charles Trowbridge	<i>Colorado Springs.</i>	914 N. Corona.
Lee, Gale Auten	<i>Lamar, Colo.</i>	930 N. Weber.
Leipheimer, Helen L.	<i>Colorado Springs.</i>	629 N. Weber.
Liljestrom, George William (E)	<i>Pueblo, Colo.</i>	9 Barnes Bldg.
Long, Mildred	<i>Denver, Colo.</i>	McGregor Hall.
McCammon, Floyd Franklin (E)	<i>Colorado Springs.</i>	14 S. 18th St.
McNeil, Frederick Brainard	<i>Shawnee, Okla.</i>	919 N. Weber.
Martin, Earl Gilbert (E)	<i>Loveland, Colo.</i>	Hagerman Hall.
Merrill, Madre	<i>Colorado Springs.</i>	226 E. Monument St.
Mimmack, Rufus Frederick	<i>Eaton, Colo.</i>	1125 N. Nevada Ave.
Mohrbacher, Florence	<i>Cripple Creek, Colo.</i>	Ticknor Hall.
Morse, Levi Parminter	<i>Grand Junction, Colo.</i>	930 N. Weber.
Munro, Edward Everett Hale	<i>Columbus, Neb.</i>	930 N. Weber.
Nelson, Robert Rutherford (E)	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Pearce, Virginia Lizette	<i>Colorado Springs.</i>	1335 N. Nevada Ave.
Peck, Bertha Merea	<i>Colorado Springs.</i>	914 Cheyenne Road.
Pollock, Milton Wayne (E)	<i>Colorado Springs.</i>	1908 Colorado Ave.
Pooler, Dorothy Hazel	<i>Austin, Minn.</i>	McGregor Hall.
Powell, Arthur Lester (E)	<i>Cañon City, Colo.</i>	1210 Wood Ave.
Randolph, Jay (E)	<i>Colorado Springs.</i>	103 N. Spruce St.
Ransdell, Hollace Vivian	<i>Colorado Springs.</i>	813 N. Wahsatch.
Ritterman, Chloie May	<i>Hawley, Minn.</i>	501 E. Boulder.
Ritterman, Ralph	<i>Hawley, Minn.</i>	501 E. Boulder.
Rogers, Edythe Alwilda	<i>Colorado Springs.</i>	1422 N. Weber.
Ross, Willard Cherrington	<i>Grand Junction.</i>	1319 N. Nevada Ave.
Savage, Laura Ada	<i>Great Falls, Mont.</i>	McGregor Hall.
Savage, Lucy Eunice	<i>Great Falls, Mont.</i>	McGregor Hall.
Sawhill, Ray	<i>Cañon City, Colo.</i>	427 N. Weber.
Shadford, Charles Alfred	<i>Colorado Springs.</i>	1211 N. Franklin.
Smythe, William Ralph	<i>Colorado Springs.</i>	210 E. Dale St.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Spahr, Harold	<i>Colorado Springs.</i>	1530 Lincoln Ave.
Sprengle, Eva May	<i>Pueblo, Colo.</i>	McGregor Hall.
Stanard, Margaret Emily	<i>Pueblo, Colo.</i>	McGregor Hall.
Steuerwald, Lois	<i>Longmont, Colo.</i>	McGregor Hall.
Stiles, Frank Luther	<i>Loveland, Colo.</i>	Hagerman Hall.
Stocks, Joseph Wendell	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Sumner, May Beatrice	<i>Hahn's Peak, Colo.</i>	115 E. Del Norte.
Sweetser, Mary Louise	<i>Colorado Springs.</i>	1729 N. Corona.
Tamayo, Fernando Carlos (E)	<i>San Cristobal, Tachira, Venezuela</i>	706 N. Nevada Ave.
Taylor, Clarion Wells	<i>Colorado City, Colo.</i>	429 Lincoln Ave.
Taylor, James Earl	<i>Colorado Springs.</i>	1526 Hayes St.
Taylor, Milford Edson	<i>Colorado City, Colo.</i>	429 Lincoln Ave.
Teague, Constance	<i>Denver, Colo.</i>	Ticknor Hall.
Teague, Dorothy Tremayne	<i>Denver, Colo.</i>	McGregor Hall.
Thomas, Walter Dill	<i>Colorado Springs.</i>	1203 N. Nevada Ave.
Thompson, Ethel Borrowdale	<i>Florence, Colo.</i>	Montgomery Hall.
Turner, Merrill Henry	<i>Eaton, Colo.</i>	1122 N. Cascade.
Van Diest, Alice Elfrieda	<i>Colorado Springs.</i>	719 N. Nevada Ave.
Walker, Prudence May	<i>Grand Junction.</i>	McGregor Hall.
White, Lavina Belle	<i>Pueblo, Colo.</i>	Montgomery Hall.
Will, Donald Jesse	<i>Los Angeles, Cal.</i>	1122 N. Cascade Ave.
Williams, Jessie Jeannette	<i>Woodland Park.</i>	McGregor Hall.
Williams, Russell Ventres (E)	<i>Pueblo, Colo.</i>	1203 N. Tejon.
Winans, Byron	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Winternitz, Elizabeth	<i>Colorado City, Colo.</i>	319 Colorado Ave.
Wright, Lillian	<i>Colorado Springs.</i>	1414 Lincoln Ave.
Young, Gladys Amelia	<i>Colorado Springs.</i>	320 E. Boulder St.

FRESHMEN.

Abrams, Esther	<i>Little Rock, Ark.</i>	Ticknor Hall.
Anderson, John Forbes	<i>Ouray, Colo.</i>	Hagerman Hall.
Augh, James Hern Young (E)	<i>Seoul, Korea.</i>	Hagerman Hall.
Aylard, Margaret Helen	<i>Colorado Springs.</i>	1521 N. Weber.
Bailey, Edythe	<i>Pueblo, Colo.</i>	Ticknor Hall.
Banfield, Gertrude Sterling	<i>Austin, Minn.</i>	McGregor Hall.
Barnard, Foster Goldsboro	<i>Manitou, Colo.</i>	Manitou, Colo.
Bateman, Kathryn	<i>Salida, Colo.</i>	Bemis Hall.
Beavers, James Leslie (E)	<i>Lamar, Colo.</i>	Hagerman Hall.
Belk, Dorothea	<i>Pueblo, Colo.</i>	McGregor Hall.
Berry, Alice America	<i>Colorado Springs.</i>	436 E. St. Vrain.
Bispham, Miriam Freeman	<i>Colorado Springs.</i>	2111 N. Nevada Ave
Bolles, Frederick Howett	<i>Rocky Ford, Colo.</i>	1123 N. Weber.
Boyd, Edith	<i>Colorado Springs.</i>	1220 N. Tejon.
Boyd, Helen Margaret	<i>Norton, Kan.</i>	Bemis Hall.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Bowers, Hazel	<i>Colorado Springs.</i>	2008 N. Nevada Ave.
Bradley, Ruth Elizabeth	<i>Colorado Springs.</i>	430 W. Pikes Peak.
Briscoe, John Lee	<i>Castle Rock, Colo.</i>	Hagerman Hall.
Bryson, Florence June	<i>Pueblo, Colo.</i>	Ticknor Hall.
Bunker, Jerome Vickers	<i>Greeley, Colo.</i>	930 N. Weber.
Caldwell, Helen Elizabeth	<i>Brookings, S. Dak.</i>	McGregor Hall.
Caldwell, Jesse Carter (E)	<i>Longmont, Colo.</i>	712 N. Tejon.
Carnahan, Mary Katharine	<i>Durango, Colo.</i>	Ticknor Hall.
Carlson, Georgia May	<i>Denver, Colo.</i>	McGregor Hall.
Carrick, Mattie	<i>Colorado Springs.</i>	1430 N. Weber.
Claybaugh, Esther	<i>Austin, Colo.</i>	Montgomery Hall.
Clemans, Martha Elizabeth	<i>Colorado Springs.</i>	17 E. Dale St.
Cochran, Fielding B.	<i>Chickasha, Okla.</i>	915 N. Weber.
Cole, Mark Stevens	<i>Yampa, Colo.</i>	Hagerman Hall.
Collins, Ruth Graham	<i>Colorado Springs.</i>	Plaza Hotel.
Cook, Albert Rolland (E)	<i>Delta, Colo.</i>	Hagerman Hall.
Cover, Lee Hulbert	<i>Rocky Ford, Colo.</i>	1122 N. Cascade.
Craise, Marguerite	<i>Denver, Colo.</i>	Bemis Hall.
Cross, Florence	<i>Colorado Springs.</i>	1630 Grant Ave.
Crossan, Robert Reid (E)	<i>Yampa, Colo.</i>	Hagerman Hall.
Davis, Chester Carl	<i>Loveland, Colo.</i>	1211 N. Weber St.
Davis, Gladys Marshall	<i>Sterling, Colo.</i>	McGregor Hall.
Dawson, Ruth Elizabeth	<i>Denver, Colo.</i>	Bemis Hall.
Donaldson, Irene Brownlee	<i>Denver, Colo.</i>	Bemis Hall.
Depuy, Percy Leroy	<i>Girard, Kan.</i>	520 E. Uintah St.
Dudley, Donald Ashworth (E)	<i>Colorado Springs.</i>	14 Cheyenne Road.
Duke, Bruce Edward Dudley	<i>Hotchkiss, Colo.</i>	416 N. Nevada Ave.
Duke, Horace Edward	<i>Hotchkiss, Colo.</i>	416 N. Nevada Ave.
Dunlavy, Eva Irene	<i>Denver, Colo.</i>	Ticknor Hall.
Durbin, Helen Avery	<i>Denver, Colo.</i>	Bemis Hall.
Dworak, Frances Emma	<i>Colorado Springs.</i>	1203 Grant Ave.
Eads, Perry Raymond	<i>Colorado Springs.</i>	715 S. Sierra Madre.
Elliott, Cleona Eva	<i>Cañon City, Colo.</i>	Manitou, Colo.
Emerick, Gladys	<i>Colorado Springs.</i>	412 N. Nevada Ave.
England, Stephen Jackson, Jr.	<i>Salida, Colo.</i>	417 N. Corona.
Ettinger, Carl Newman (E)	<i>Peirce City, Mo.</i>	1115 Wood Ave.
French, Henry Julius	<i>Glenwood Springs, Colo.</i>	919 N. Weber.
Frickey, Edwin	<i>Brush, Colo.</i>	418 N. Nevada Ave.
Gardner, Florence Blanche	<i>St. Johns, Mich.</i>	1627 N. Weber.
Garnett, Anna Maud	<i>Pueblo, Colo.</i>	Ticknor Hall.
Garrett, Myriam Christy	<i>Colorado Springs.</i>	710 N. Cascade.
Garside, Ben Charles, Jr.	<i>Denver, Colo.</i>	1125 N. Nevada Ave.
Geiser, Claude William (E)	<i>Monte Vista, Colo.</i>	Hagerman Hall.
Gilbert, Clara Belle	<i>Long Beach, Cal.</i>	Bemis Hall.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Gill, Rose Miriam	<i>Vinita, Okla.</i>	Bemis Hall.
Glezen, Lee Louis (E)	<i>Colorado Springs.</i>	826 E. Cucharas.
Golden, Carl Errol	<i>Longmont, Colo.</i>	712 N. Tejon.
Griffith, Kean	<i>Cory, Colo.</i>	Hagerman Hall.
Hamilton, Sara Grace	<i>Colorado Springs.</i>	315 E. Willamette.
Harbison, Edith Estelle	<i>Denver, Colo.</i>	McGregor Hall.
Harris, Marea Vaughn	<i>Newcastle, Colo.</i>	Montgomery Hall.
Harrison, Hazel Dawn	<i>Cañon City, Colo.</i>	Montgomery Hall.
Hassell, Julia Frances	<i>Colorado Springs.</i>	1424 Wood Ave.
Hathway, Julia	<i>Colorado Springs.</i>	Plaza Hotel.
Hazen, Frank De Forrest (E)	<i>Hamilton, Ill.</i>	919 N. Weber.
Heald, Edward Clifford	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Heffner, Pete, Jr.	<i>Chickasha, Okla.</i>	913 N. Weber.
Heimbecher, Louis	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Henn, Samuel Chester	<i>Paonia, Colo.</i>	930 N. Weber.
Henry, James Smith	<i>Camp Point, Ill.</i>	911 N. Nevada Ave.
Hill, Gladys Beatrice	<i>Denver, Colo.</i>	Bemis Hall.
*Hinch, Hazel	<i>Colorado Springs.</i>	1510 Cheyenne Road.
Huston, Harold	<i>Manzanola, Colo.</i>	114 N. Weber.
Hutchison, Mary Elizabeth	<i>Colorado Springs.</i>	732 N. Wahsatch.
Inghram, William	<i>Omaha, Neb.</i>	608 N. Nevada Ave.
Jackson, John Evans	<i>Rocky Ford, Colo.</i>	1122 N. Cascade.
Johnson, Charles Arthur, Jr.	<i>Durango, Colo.</i>	230 E. Yampa.
Johnson, Frances	<i>American Fork, Utah.</i>	McGregor Hall.
Jones, Mildred Ankeny	<i>Ottawa, Kan.</i>	McGregor Hall.
Judevine, Harriett	<i>Longmont, Colo.</i>	Ticknor Hall.
Judevine, Horace Franklin	<i>Longmont, Colo.</i>	712 N. Tejon.
Kapitzky, Ruth Lela	<i>Strasburg, Ohio.</i>	McGregor Hall.
Keating, Kathrine	<i>Pueblo, Colo.</i>	Bemis Hall.
Keeth, Frances	<i>Colorado Springs.</i>	308 E. Platte.
Kennison, Viola Frances	<i>Salida, Colo.</i>	McGregor Hall.
Kinnikin, Mathias Bond (E)	<i>Worden, Ill.</i>	423 E. El Paso
Kinsley, Arthur Carruthers (E)	<i>Colorado Springs.</i>	1340 N. Weber.
Kurth, Norval Alvin (E)	<i>Colorado Springs.</i>	218 S. Twelfth St.
Kutzleb, Charles Albert	<i>Cañon City, Colo.</i>	Hagerman Hall.
Lane, Preston	<i>Lynn Haven, Fla.</i>	540 W. Monument.
Lennox, Helen Virginia	<i>Colorado Springs.</i>	1339 N. Nevada Ave.
Leiberknecht, Scott Lewis	<i>Colorado Springs.</i>	1319 N. Nevada Ave.
Lillie, Agnes Farrar	<i>Denver, Colo.</i>	Bemis Hall.
Lisenby, Ruby	<i>Colorado Springs.</i>	409 Olive St.
Lough, Vance	<i>Pataskala, Ohio.</i>	501 N. Weber.
Lyons, Mabel Jessie	<i>Chicago, Ill.</i>	808 N. Weber.
McIntire, Oliver Simpson	<i>Olathe, Colo.</i>	106 E. San Rafael.
Mackay, Annie Louise	<i>Denver, Colo.</i>	McGregor Hall.

*Deceased.

NAME.	HOME ADDRESS.	CITY ADDRESS.
McKesson, William Bryan	<i>Colorado Springs.</i>	1215 Colorado Ave.
McLain, Ernest James	<i>Cañon City, Colo.</i>	919 N. Weber.
Madden, John Henry	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Mann, Wilbur Reece	<i>Tabor, Iowa.</i>	919 N. Weber.
Marsh, George Austin, Jr.	<i>Pueblo, Colo.</i>	928 N. Weber.
Martin, Gladys Marian	<i>Colorado Springs-Ivywild</i>	1411 S. Tejon St.
Mason, Edith Parsons	<i>Colorado Springs.</i>	619 N. Prospect.
Maxwell, Raymond Waldron (E)	<i>Castle Rock, Colo.</i>	Hagerman Hall.
Merrill, Glen	<i>Grand Junction.</i>	1319 N. Nevada Ave.
Meyer, Grace	<i>Colorado Springs.</i>	1606 Cheyenne Road.
Milstead, Veffie Gertrude	<i>Olney Springs, Colo.</i>	Ticknor Hall.
Mimmack, William Edward	<i>Eaton, Colo.</i>	1125 N. Nevada Ave.
Morrow, Walter Tomson (E)	<i>Colorado Springs.</i>	Broadmoor.
Moseley, Helen Fern	<i>Colorado Springs.</i>	221 E. Cimarron.
Mullen, Florence	<i>Colorado Springs.</i>	127 E. Las Animas.
Neff, Kenzie Benewell	<i>Delta, Colo.</i>	928 N. Weber.
Neuswanger, Peter Christopher	<i>Greeley, Colo.</i>	1122 N. Cascade.
Nicholson, Helen Louise	<i>Colorado Springs.</i>	110 S. Wahsatch.
Nordeen, Ansel Gilbert (E)	<i>Aurora, Neb.</i>	930 N. Weber.
Nowels, Kenneth	<i>Colorado Springs.</i>	721 W. Cucharas.
Oberndorfer, Beulah	<i>Colorado Springs.</i>	916 N. Weber.
Ord, Malcolm Llewellyn (E)	<i>Colorado Springs.</i>	326 E. Kiowa.
Patton, Pearl	<i>Colorado Springs.</i>	215 E. Monument.
Paulson, Paul Alvin (E)	<i>Davenport, Iowa.</i>	Hagerman Hall.
Perryman, Lora Ara Belle	<i>Overbrook, Kan.</i>	1809 N. Tejon.
Porter, Alfred Jones	<i>Greensburg, Pa.</i>	Plaza Hotel.
Prichard, George William	<i>Pratt, Kan.</i>	928 N. Weber.
Pugh, Mortimer	<i>Upper Montclair, N. J.</i>	1224 N. Tejon.
Puntenney, Harriet	<i>Pueblo, Colo.</i>	Bemis Hall.
Ragle, William Floyd	<i>Salina, Kan.</i>	1722 N. Royer St.
Randol, Josephine	<i>Salida, Colo.</i>	Ticknor Hall.
Rawlings, John William (E)	<i>Monte Vista, Colo.</i>	1122 N. Cascade.
Reed, Cecil David (E)	<i>Colorado Springs.</i>	936 E. Moreno Ave.
Richardson, Maude	<i>Cañon City, Colo.</i>	Montgomery Hall.
Richardson, Ruth Velma	<i>Colorado Springs.</i>	1328 S. Tejon.
Ringle, Flora Helen	<i>Greeley, Colo.</i>	Montgomery Hall.
Robbins, Dwight Lincoln	<i>Colorado Springs.</i>	324 N. Institute.
Roberson, Gladys	<i>Glenwood Springs, Colo.</i>	Montgomery Hall.
Roe, Kathleen	<i>Ohio, Colo.</i>	20 E. Dale St.
Rose, Lynn Talmage	<i>Chickasha, Okla.</i>	915 N. Weber St.
Sager, Henry	<i>Custer, S. Dak.</i>	117 N. Weber.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Scheib, Waldo	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Schlessman, Gerald Lee	<i>Colorado Springs.</i>	312 E. Willamette.
Schweiger, Carl Albert	<i>Lafayette, Colo.</i>	312 N. Cascade.
Shadowan, Ethel	<i>Ft. Morgan, Colo.</i>	McGregor Hall.
Shaw, Fred Francis	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Sheldon, Alan Bancroft	<i>Kansas City, Mo.</i>	Hagerman Hall.
Sinton, Ernest Albert	<i>Colorado Springs.</i>	431 S. El Paso.
Slack, Arthur Benjamin	<i>Lazear, Colo.</i>	Broadmoor.
Smillie, Cecil Clare	<i>Eaton, Colo.</i>	McGregor Hall.
Smith, Earl Boulware	<i>Cheyenne, Wyo.</i>	518 N. Pine St.
Sommers, Minnie Esther	<i>Colorado Springs.</i>	14 W. Costilla.
Spalding, John William (E)	<i>La Junta, Colo.</i>	1122 N. Cascade.
Spalding, Marion Rose	<i>La Junta, Colo.</i>	McGregor Hall.
Steele, Robert Borden	<i>Rocky Ford, Colo.</i>	1123 N. Weber.
Stewart, Thomas Leidigh	<i>Spearville, Kan.</i>	1319 N. Nevada Ave.
Strain, Frank Elven	<i>Lamar, Colo.</i>	1122 N. Cascade.
Stubbs, Maurice Garver	<i>La Junta, Colo.</i>	1122 N. Cascade.
Sundquist, Theodore Le-Roy (E)	<i>Alamosa, Colo.</i>	923 N. Weber.
Taylor, Charles Chauncey (E)	<i>Colorado Springs.</i>	1526 Hayes St.
Taylor, Charles Edgar	<i>Colorado Springs.</i>	1126 N. Corona.
Taylor, Theron	<i>Colorado Springs.</i>	444 W. Uintah.
Teague, James Hogg	<i>Gorman, Texas.</i>	Plaza Hotel.
Tegtmeyer, Emerson Ralph	<i>Colorado Springs.</i>	715 N. Tejon.
Telfer, Annis	<i>Pueblo, Colo.</i>	Bemis Hall.
Thrall, Laura Ernestine	<i>Colorado Springs.</i>	119 Tyler Place.
Titler, Floyd John (E)	<i>Longmont, Colo.</i>	712 N. Tejon.
Touzalin, Charlotte	<i>Colorado Springs.</i>	16 College Place.
Van Diest, Annette Josine	<i>Colorado Springs.</i>	719 N. Nevada Ave.
Verner, Ogden E.	<i>Paonia, Colo.</i>	930 N. Weber St.
Vickers, Denver	<i>Colorado Springs.</i>	419 N. Wahsatch.
Walker, Bertha Ellen	<i>Grand Junction, Colo.</i>	McGregor Hall.
Walker, Graham Rutledge	<i>Cheyenne, Wyo.</i>	919 N. Weber.
Wallrich, Florence Edna	<i>Alamosa, Colo.</i>	Bemis Hall.
Walsh, Winnifred Isabel	<i>Denver, Colo.</i>	Bemis Hall.
Waples, Dorothy	<i>Cody, Wyo.</i>	Ticknor Hall.
Warnock, Janet	<i>Loveland, Colo.</i>	Ticknor Hall.
Waterhouse, Georgiana	<i>Weiser, Idaho.</i>	Ticknor Hall.
Weaver, Bertha Elizabeth	<i>Colorado Springs.</i>	2609 N. Cascade.
Webb, Marian Esther	<i>Colorado Springs.</i>	2 E. Bijou St.
Weber, Glenn (E)	<i>Colorado Springs.</i>	234 Franklin St.
Wendell, Forrest Ellsworth	<i>Buttes, Colo.</i>	219 N. Wahsatch.
Weston, Sylvia Gwendolyne	<i>Colorado Springs.</i>	1112 E. Pikes Peak
Whipple, Marjorie Helen	<i>Cheyenne, Wyo.</i>	Ticknor Hall.
Wickham, Esther Lionne	<i>Denver, Colo.</i>	Bemis Hall.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Williams, Edward	<i>Walsen, Colo.</i>	1319 N. Nevada Ave.
Williams, Homer Hanson	<i>Hamilton, Ill.</i>	919 N. Weber.
Wills, Benjamin Grun	<i>Colorado City, Colo.</i>	2018 Armstrong Ave.
Wilson, Beulah	<i>Manitou, Colo.</i>	Bemis Hall.
Wilson, Martha	<i>Denver, Colo.</i>	Ticknor Hall.
Wood, Ben Walter (E)	<i>Spearfish, S. Dak.</i>	
Wubben, Horace Jay	<i>Paonia, Colo.</i>	1339 N. Nevada Ave.
Yant, Philip	<i>La Junta, Colo.</i>	712 N. Tejon.
Yokoyama, Matsusaburo	<i>Mito, Japan.</i>	1130 Wood Ave.

SPECIALS AND REGISTERED VISITORS.

Adams, Mrs. Frederick W.	<i>Colorado Springs.</i>	1119 Palmer Park Boulevard.
Baldwin, John A.	<i>Sarcoxie, Mo.</i>	518 S. Nevada Ave.
Blackman, Ida Louise	<i>Colorado Springs.</i>	1806 Wood Ave.
Campbell, Jane Allen	<i>Ann Arbor, Mich.</i>	816 N. Nevada Ave.
Coltrin, Charles Wesley	<i>Franklin, Neb.</i>	118 E. Platte Ave.
Davis Elizabeth	<i>Greenfield, Mass.</i>	Montgomery Hall.
Dickey, Nana B.	<i>Colorado Springs.</i>	319 N. Weber.
Fischer, Claribel Ben Hur	<i>Santa Fe, N. Mex.</i>	McGregor Hall.
Fulton, Archie F.	<i>Treghorn, Scotland.</i>	315 N. Weber.
Funabashi, Keusuke	<i>Aichiken, Japan</i>	1121 N. Tejon St.
Johns, Charles Robert	<i>Blaine, Colo.</i>	Plaza Hotel.
Jones, Lucy Dunbar	<i>Colorado Springs.</i>	525 N. Cascade.
Lewis, Mrs. Inez Johnson	<i>Colorado Springs.</i>	1825 Cheyenne Blvd.
Lippincott, Camilla	<i>Colorado Springs.</i>	Broadmoor.
Lloyd, Catherine	<i>Colorado Springs.</i>	1528 N. Nevada Ave.
Lloyd, Lucy Annette	<i>Colorado Springs.</i>	1528 N. Nevada Ave.
McFarlane, Albert	<i>Victor, Colo.</i>	723 N. Weber.
Pearce, Wallace James	<i>Plainfield, N. J.</i>	Y. M. C. A.
Perley, Clara Chaplin	<i>Colorado Springs.</i>	717 Main St., Nob Hill
Perry, Geneva	<i>Colorado Springs.</i>	630 E. Willamette.
Prescott, Della Reed	<i>Woolwich, Me.</i>	McGregor Hall.
Quinn, L. C.	<i>Colorado Springs.</i>	Broadmoor.
Riggs, Eva Victoria	<i>Colorado Springs.</i>	819 E. Cache la Poudre
Smith, Madame Gulliford	<i>Pueblo, Colo.</i>	Bemis Hall.
Smith, Roy R.	<i>Council Bluffs, Ia.</i>	1400 Cheyenne Blvd.
Spicer, Wilma Olive	<i>Colorado Springs.</i>	423 N. Weber.
Strohm, Lillie B.	<i>Colorado Springs.</i>	512 S. Prospect St.
Taff, George	<i>Colorado Springs.</i>	1932 N. Cascade.
Taylor, Mrs. G. M.	<i>Colorado Springs.</i>	405 N. Cascade.
Washburn, Miriam S.	<i>Colorado Springs.</i>	9 E. Cache la Poudre

DEPARTMENT OF MUSIC.

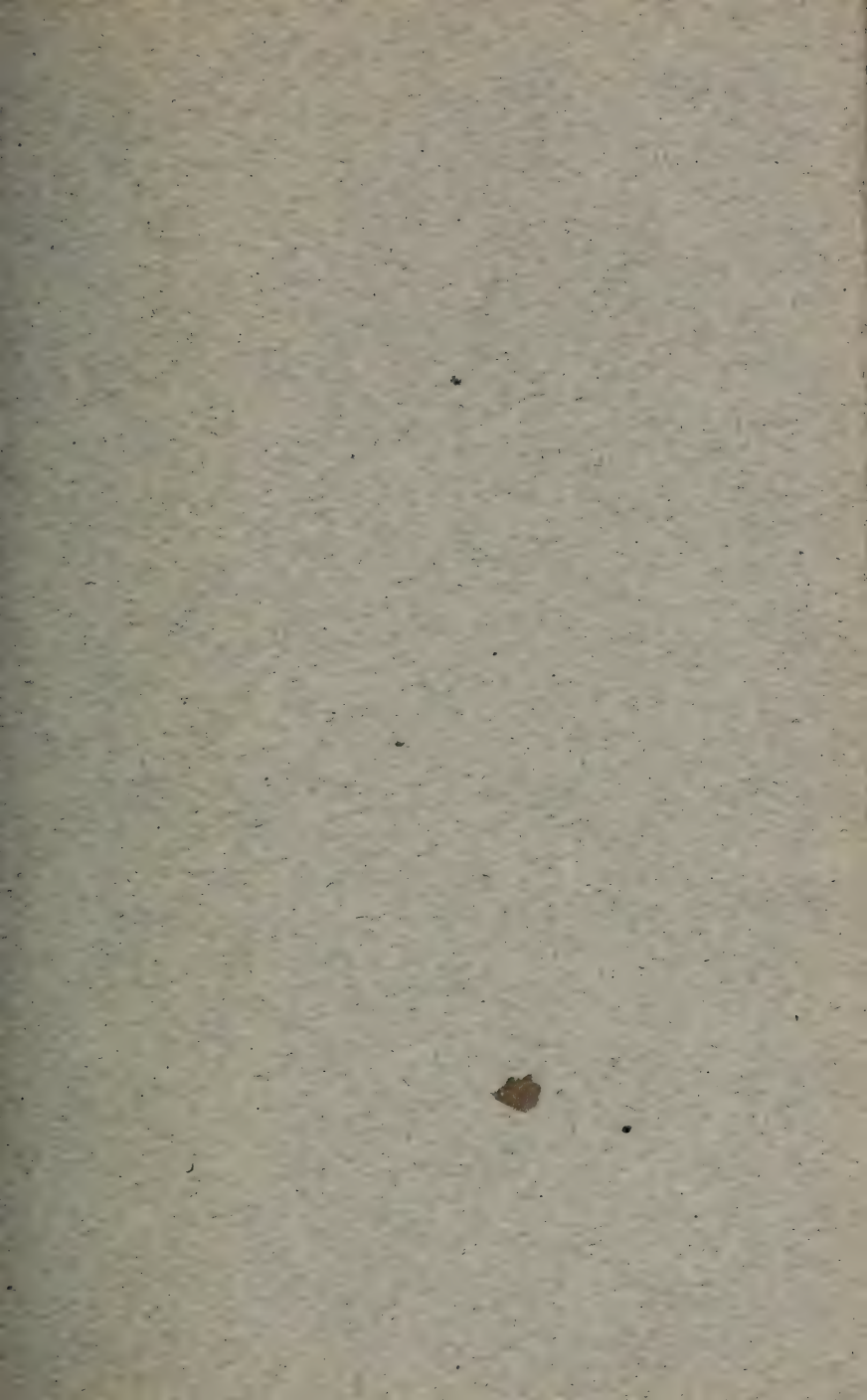
Abrams, Esther	<i>Little Rock, Ark.</i>	Ticknor Hall.
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NAME.	HOME ADDRESS.	CITY ADDRESS
Beach, Mary Edna	<i>Colorado City.</i>	3 Ruby Ave.
Berryhill, Robert Hamilton	<i>Colorado Springs.</i>	324 E. Yampa St.
Brooks, Eva	<i>Steamboat Springs.</i>	Ticknor Hall.
Bruno, Mrs. Frank	<i>Colorado Springs.</i>	2106 N. Tejon St.
Caldwell, Vivian	<i>Colorado Springs.</i>	1112 Palmer Pk. Blvd.
Cameron, Hila Katherine	<i>Colorado Springs.</i>	327 N. Tejon St.
Carnahan, Mary Katherine	<i>Durango, Colo.</i>	Ticknor Hall.
Carroll, Kathleen Gardner	<i>Colorado Springs.</i>	306 E. Bijou St.
Cassidy, Helen Margaret	<i>Denver, Colo.</i>	Bemis Hall.
Christy, Gladys	<i>Colorado Springs.</i>	1419 N. Tejon St.
Davis, Mildred	<i>Pueblo, Colo.</i>	Pueblo, Colo.
Deane, Ruth	<i>Colorado Springs.</i>	418 N. Pine St.
De Nio, Lois	<i>Colorado Springs.</i>	25 E. Las Animas St.
Dunlavy, Eva Irene	<i>Denver, Colo.</i>	Ticknor Hall.
Durnell, Margaret Elizabeth	<i>Colorado Springs.</i>	427 W. Uintah St.
Emery, Dorothy	<i>Colorado Springs.</i>	1420 N. Nevada Ave.
Fischer, Claribel Ben Hur	<i>Santa Fe, N. M.</i>	McGregor Hall.
Friedman, Mrs. Joseph	<i>Colorado Springs.</i>	815 E. Monument St.
Fuller, Violet Minerva	<i>Colorado Springs.</i>	1429 N. Weber St.
Fulton, Archie	<i>Treghorn, Scotland</i>	315 N. Weber St.
Griswold, Beryl	<i>Colorado Springs.</i>	915 N. Weber St.
Hale, Donald Emerson	<i>Colorado Springs.</i>	1428 N. Nevada Ave.
Harlan, Lois	<i>Colorado Springs.</i>	905 Cheyenne Road.
Harlan, Mabel Margaret	<i>Colorado Springs.</i>	920 Cheyenne Road.
Henderson, Isabel Corbin	<i>Sterling, Colo.</i>	McGregor Hall.
Hills, George	<i>Colorado Springs.</i>	12 College Place.
Jahn, Helen	<i>Colorado Springs.</i>	815 N. Cascade Ave.
Jencks, Philip	<i>Colorado Springs.</i>	627 N. Wahsatch Ave.
Kelsey, Ruth Marie	<i>Sterling, Colo.</i>	McGregor Hall.
Korsmeyer, Helen	<i>Colorado Springs.</i>	1411 N. Weber St.
Lacy, Lester Daniel	<i>Wakita, Okla.</i>	1318 N. Chestnut St.
Leslie, Myrtle	<i>Colorado Springs.</i>	433 W. Bijou St.
Mathis, Irene Edna	<i>Colorado Springs.</i>	814 E. Monument St.
Merwin, Margaret Stone	<i>Bloomington, Ill.</i>	McGregor Hall.
Nothuang, Alma Lydia	<i>Portland, Colo.</i>	1428 N. Nevada Ave.
Organ, Ruth Margaret	<i>Colorado Springs.</i>	424 N. Pine St.
Paige, Margaret	<i>Colorado Springs.</i>	219 N. Wahsatch Ave.
Parsons, Edward Smith	<i>Colorado Springs.</i>	1130 Wood Ave.
Prichard, Margaret Elizabeth	<i>Colorado Springs.</i>	1518 Washington Ave.
Reinking, Bethany	<i>Colorado Springs.</i>	21 Washington St.
Riphey, Margaret Elizabeth	<i>Colorado Springs.</i>	1311 N. Wahsatch Ave.
Roberson, Gladys Adeline	<i>Glenwood Springs,</i> <i>Colo.</i>	Montgomery Hall.
Shaw, Minta	<i>Kanorado, Kan.</i>	8 S. Corona Ave.
Shields, Mrs. Viola	<i>Colorado Springs.</i>	814 E. Yampa St.
Sinton, Ernest Albert	<i>Colorado Springs.</i>	431 S. El Paso St.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Smillie, Cecile Clare	<i>Eaton, Colo.</i>	McGregor Hall.
Spicer, Wilma Olive	<i>Colorado Springs.</i>	423 N. Weber St.
Stelson, Fay	<i>Colorado Springs.</i>	209 W. Cheyenne Rd.
Stelson, Julia Catherine	<i>Colorado Springs.</i>	209 W. Cheyenne Rd.
Sutton, Elizabeth Chase	<i>Denver, Colo.</i>	Bemis Hall.
Thrall, Laura Ernestine	<i>Colorado Springs.</i>	119 Tyler Place.
Warnock, Janet Zilpah	<i>Loveland, Colo.</i>	Ticknor Hall.
Waterhouse, Georgiana	<i>Wieser, Idaho.</i>	Ticknor Hall.
Wharton, Jessie Catherine	<i>Colorado Springs.</i>	10 S. Wahsatch Ave.
Whittenberger, Gladys Mae	<i>Colorado Springs.</i>	1911 N. Tejon St.
Wickham, Esther Lionne	<i>Denver, Colo.</i>	Bemis Hall.

SUMMARY

Graduate Students.....	11
Seniors	78
Juniors	71
Sophomores	142
Freshmen	197
Specials and Visitors.....	30
Undergraduates	518
Total	529
School of Music.....	57
	586
Names Counted Twice.....	25
Grand Total.....	561

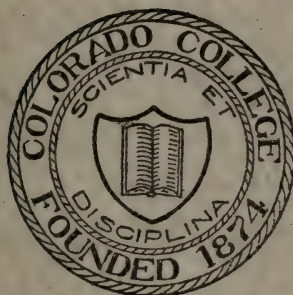


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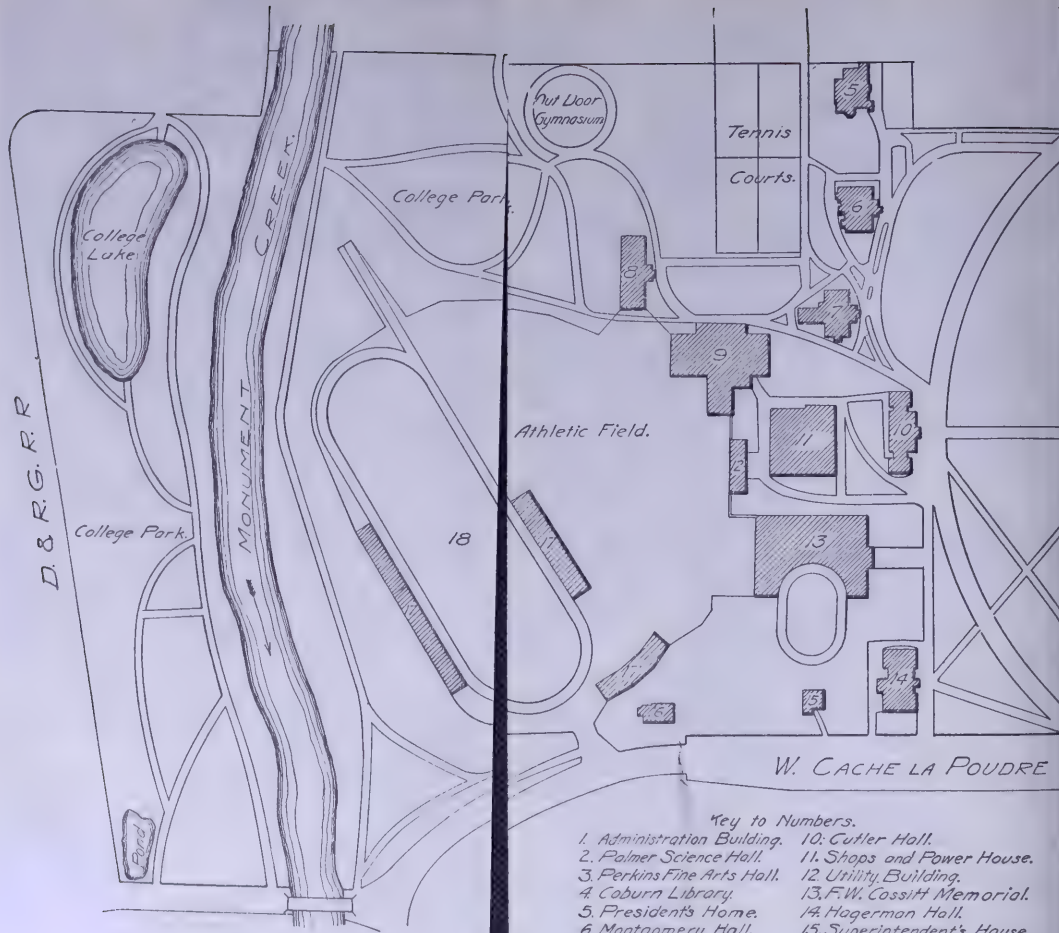
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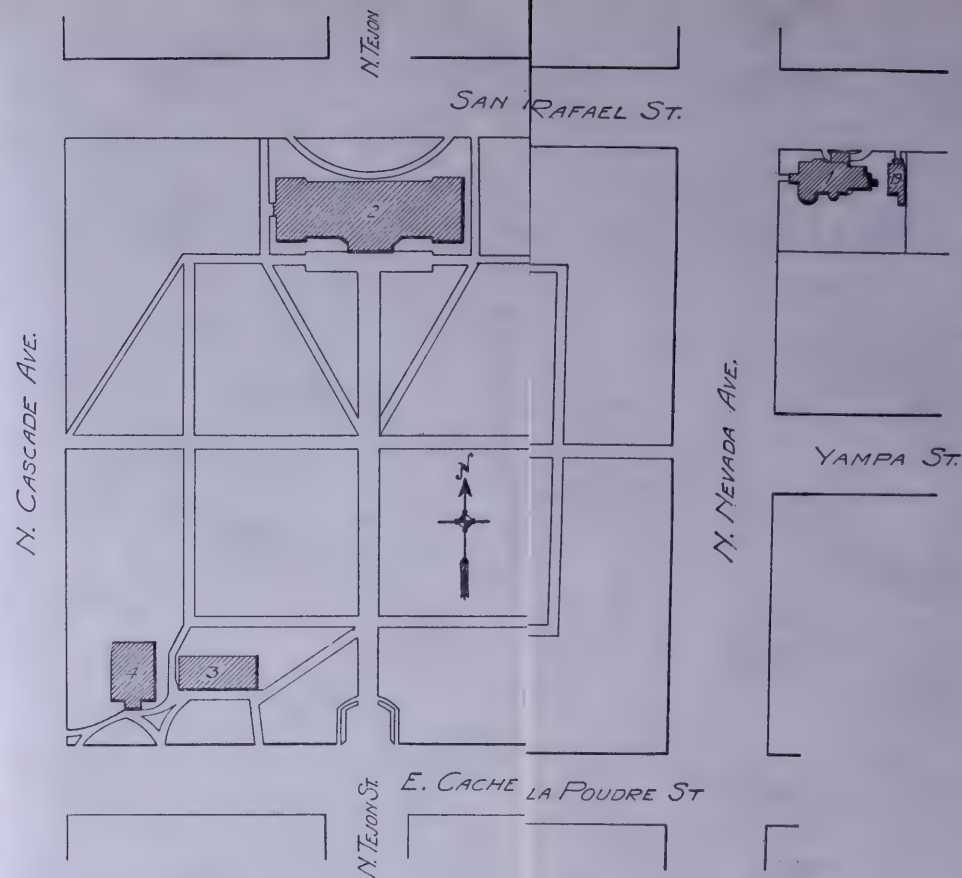
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gress of July 16, 1894.

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- Key to Numbers.
- | | |
|-----------------------------|------------------------------|
| 1. Administration Building. | 10. Cutler Hall. |
| 2. Palmer Science Hall. | 11. Shops and Power House. |
| 3. Perkins Fine Arts Hall. | 12. Utility Building. |
| 4. Coburn Library. | 13. F.W. Cossitt Memorial. |
| 5. President's Home. | 14. Hagerman Hall. |
| 6. Montgomery Hall. | 15. Superintendent's House. |
| 7. Ticknor Hall. | 16. Observatory. |
| 8. McGregor Hall. | 17. Grand Stands. |
| 9. Bemis Hall. | 18. Washburn Athletic Field. |
| | 19. Garage. |



MAP
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CAMPUS.

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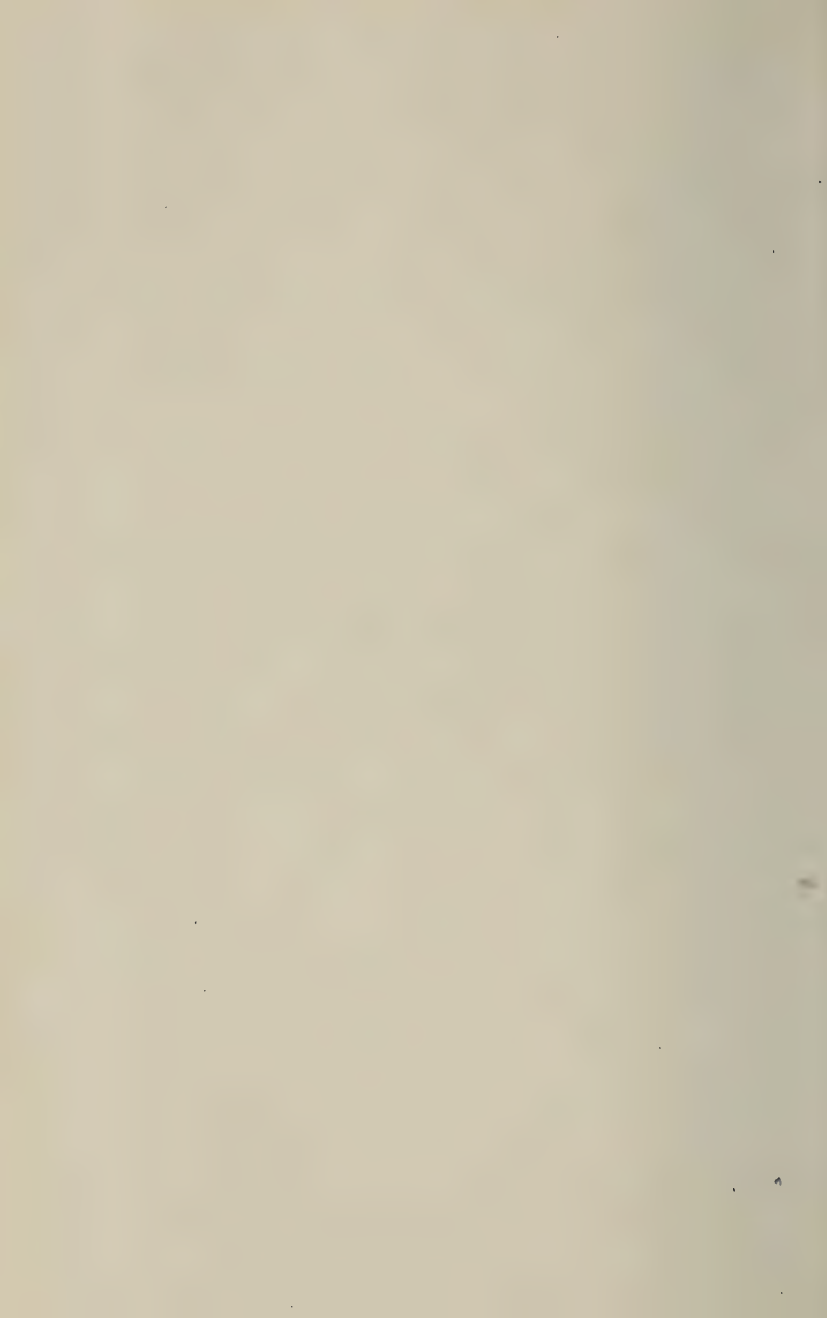
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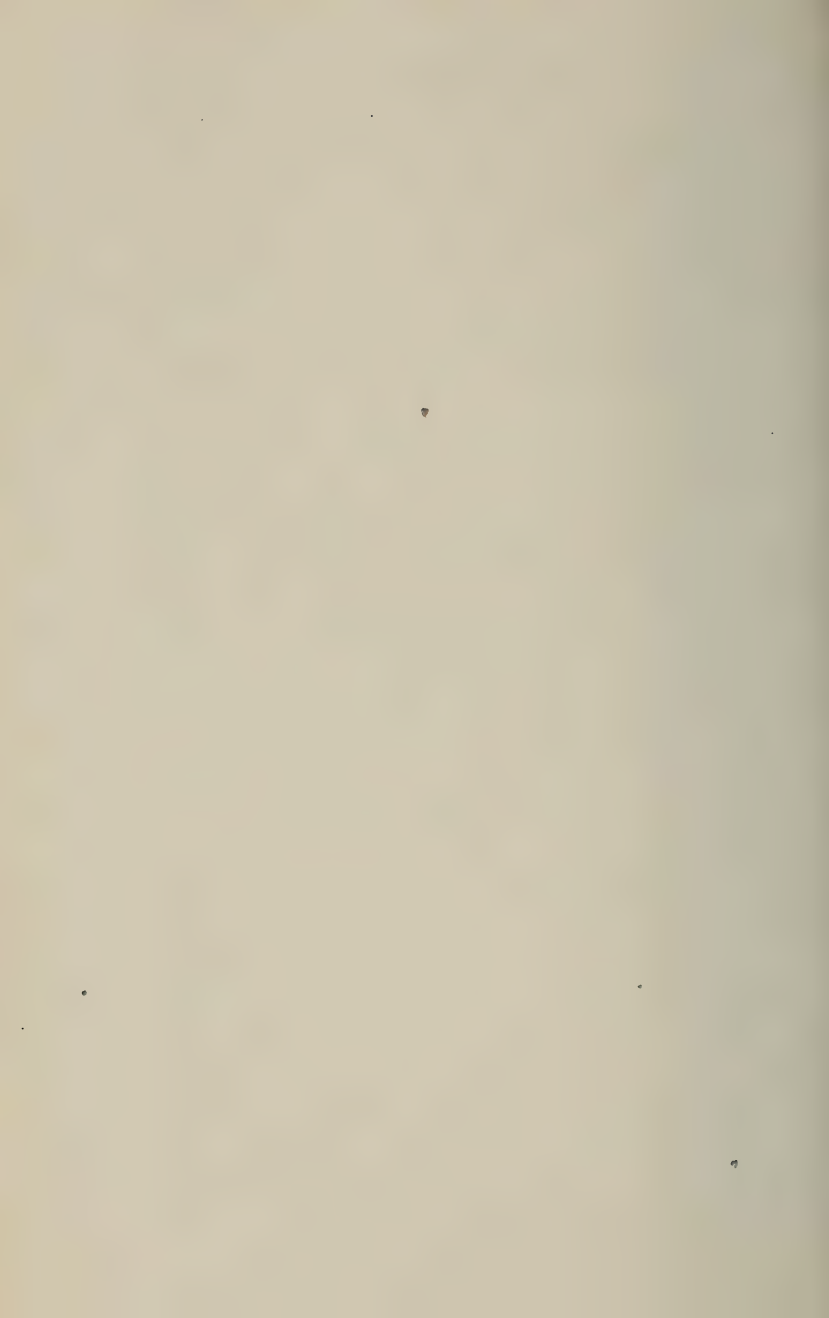


Contents

	PAGE
Calendar	5
Historical Statement	6
Organization of the College	7
Trustees	9
Standing Committees of the Trustees	10
College Officers	11
Board of Control of the Library	12
Faculty	13
Committees of the Faculty	19
Admission—	
Registration	21
Entrance Requirements—	
For Courses leading to the Degree of Bachelor of Arts, and Bachelor of Arts in Business Administration and Banking	21
For Courses leading to the Degrees of Bachelor of Science in Engineering and Forest Engineer	22
Unit Courses	23
Admission by Certificate	27
Accredited Schools	28
Admission to Advanced Standing	29
Special Students	29
Requirements for Degrees—	
Degree of Bachelor of Arts	30
Required Subjects	30
Course of Prescribed Study	30
Major Subject	31
Electives	32
Degree of Bachelor of Arts in Business Administration and Banking	32
Degree of Bachelor of Science in Civil and Irrigation En- gineering	34
Degree of Bachelor of Science in Electrical Engineering	37
Degree of Forest Engineer	39
Advanced Degrees	41
Degree of Master of Arts	42
Degrees of Civil Engineer and Electrical Engineer	42
Degree of Master of Forestry	43
The Harvard Exchange	44

	PAGE
Department of Instruction—	
Philosophy	45
Education	48
Greek	49
Latin	49
English	50
Biblical History and Literature	53
Public Speaking	53
German	54
French	55
Spanish	57
Italian	59
History of Art	59
History	60
Political Science	62
Economics	63
Sociology	65
Business Administration and Banking	66
Mathematics	68
Astronomy	69
Chemistry	69
Biology	72
Physics	75
Geology	77
Physical Education	78
Civil and Irrigation Engineering	81
Field Courses in Surveying	86
Electrical Engineering	86
Mechanical Engineering Courses	89
Graphics	90
Shop Work	91
Forestry	92
Courses for Teachers	95
Music	95
Department of Music—	
Faculty	96
Admission	96
Courses of Study	96
Fine Arts Major	101
Equipment	101
Tuition	102
General Information—	
Location	103
College Buildings	103
Library	106

Laboratories and Apparatus—	PAGE
Chemistry	107
Biology	108
Physics	109
Geology	109
Psychology	110
Shops	111
Civil Engineering Laboratories	112
Surveying—Summer School	113-114
Illustrative Apparatus and Material	114
Electrical Engineering Laboratories	115
The Manitou Forest—a Field Laboratory in Forestry	117
Observatory and Meteorological Station	118
Museum	118
Religious Life	121
Student Publications	122
Literary Societies	122
Engineers' Club	122
Foresters' Club	122
The Associated Students of The Colorado College	123
Oratorical and Debating Contests	123
Phi Beta Kappa	123
College Publication	124
College Lecture Course	124
Alumni Association	126
Expenses	126
Scholarships	128
Prizes	130
Woman's Educational Society	130
Hospital Fund	131
Needs of College	131
Forms of Bequest	132
Award of Honors, Scholarships, and Prizes; Phi Beta Kappa Elections, 1914	133
Degrees Conferred in 1914	134
Students—	
Graduate Students	136
Undergraduates	136-147
Special and Registered Visitors	147
School of Music	149
Summary	150



Calendar

1915

Jan. 5—	CHRISTMAS RECESS ENDS at 8:15 a. m.	Tuesday
Jan. 15—	Mid-Year Examinations begin	Friday
Jan. 22—	Trustees' Day	Friday
Jan. 25—	SECOND HALF-YEAR BEGINS at 8:15 a. m.	Monday
Feb. 22—	Washington's Birthday: a holiday.	Monday
Feb. 28—	Day of Prayer for Colleges	Sunday
Mar. 6—	Condition Examinations begin at 8:15 a. m.	Saturday
Mar. 16—	Last day for registering for Hawley and Mary G. Slocum scholarships	Tuesday
Mar. 27—	SPRING RECESS BEGINS at 1 p. m.	Saturday
Apr. 6—	SPRING RECESS ENDS at 8:15 a. m.	Tuesday
May 28—	Examinations begin	Friday
May 31—	Summer School of Surveying opens in Manitou Park	Monday
June 6—	Baccalaureate Sermon	Sunday
June 7—	Class Day	Monday
June 8—	Annual Meeting of Board of Trustees	Tuesday
June 9—	COMMENCEMENT	Wednesday
Sept. 13—	Registration	Monday
Sept. 14—	Residence Halls open	Tuesday
Sept. 15—	FIRST HALF-YEAR BEGINS at 8:15 a. m.	Wednesday
Sept. 18—	Condition Examinations for Engineers, 8:15 a. m.	Saturday
Sept. 25—	Condition Examinations begin at 8:15 a. m.	Saturday
Oct. 15—	Last day for registering for post-graduate work	Friday
Oct. 22—	Insignia Day	Wednesday
Nov. 24—	Thanksgiving Recess begins at 5 p. m.	Wednesday
Nov. 29—	Thanksgiving Recess ends at 8:15 a. m.	Monday
Dec. 17—	CHRISTMAS RECESS BEGINS at 5 p. m.	Friday

1916

Jan. 4—	CHRISTMAS RECESS ENDS at 8:15 a. m.	Tuesday
Jan. 21—	Mid-Year Examinations begin	Friday
Jan. 28—	Trustees' Day	Friday
Jan. 31—	SECOND HALF-YEAR BEGINS at 8:15 a. m.	Monday
Feb. 22—	Washington's Birthday: a holiday.	Tuesday
Feb. 27—	Day of Prayer for Colleges	Sunday
Mar. 11—	Condition Examinations begin at 8:15 a. m.	Saturday
Mar. 21—	Last day for registering for Hawley and Mary G. Slocum scholarships	Tuesday
Mar. 25—	SPRING RECESS BEGINS at 1 p. m.	Saturday
Apr. 4—	SPRING RECESS ENDS at 8:15 a. m.	Tuesday
Apr. 21—	Good Friday: a holiday	Friday
May 30—	Memorial Day: a holiday	Tuesday
June 2—	Examinations begin	Friday
June 5—	Summer School of Surveying opens in Manitou Park	Monday
June 11—	Baccalaureate Sermon	Sunday
June 12—	Class Day	Monday
June 13—	Annual Meeting of Board of Trustees	Tuesday
June 14—	COMMENCEMENT	Wednesday

Historical Statement.

Colorado College is the oldest institution of higher education in the State. In 1874, while Colorado was yet a territory, a College upon a broad Christian foundation was established in Colorado Springs. A grant of land had been made in advance of the organization of the College in 1873 by the Colorado Springs Company, the founders of the City of Colorado Springs. The Congregational denomination, so famous for building colleges, gave, in the first years of the struggle, warm sanction and helpful guidance. With devotion and a spirit of true piety, they joined in the up-building of the College. Trustees were elected, a charter was secured, and the Rev. Jonathan Edwards became the first professor and executive officer. The authorized announcement for that year contains the following:

"It is the purpose of the Trustees to build a College in which liberal studies may be pursued under positive Christian influences. . . . The College is under no ecclesiastical or political control. Members of different churches are on its Board of Trustees. . . . The character which is most desired for this college is that of thorough scholarship and fervent piety, each assisting the other, and neither ever offered as a compensation for the defects of the other."

From the beginning, the Board of Trustees has been composed of leading professional and business men of Colorado, together with a few Eastern men of similar standing, and has ever been animated by the purpose avowed by the original Board.

The first President, the Rev. James Dougherty, was elected in 1875, and was succeeded in the following year by the Rev. E. P. Tenney. From 1885 to 1888 there was no President, but the work of teaching was carried on without interruption. At this time there was only one building on the campus, now known as Cutler Hall, erected in 1880.

In 1888 William Frederick Slocum was elected President. The faculty was at once enlarged, the courses reorganized, and Cutler Academy* incorporated as an associate preparatory school, in which students have since been trained, not only for Colorado College, but for all the leading institutions of the United States. A residence for the President was purchased. Hagerman Hall was built in 1889. In the same year the Woman's Educational Society was organized and built Montgomery Hall.

*Discontinued in June, 1914; Cutler Hall is now used for Engineering courses.

The following buildings have been erected since that time: The N. P. Coburn Library, 1894; the Henry R. Wolcott Observatory, 1894; Ticknor Hall, 1897; Perkins Fine Arts Hall, 1900; McGregor Hall, 1903; Palmer Hall, 1903; Bemis Hall, 1908; Cossitt Hall, 1914; and the Administration Building, a gift acquired in the summer of 1914. The President's residence was remodeled and enlarged in 1903.

In 1903 a Department of Engineering, with Dr. Florian Cajori as Dean, was opened to meet the increasing demand in the Rocky Mountain region for instruction in applied science. The first class was graduated in 1906.

Through the generosity of General William J. Palmer and Dr. W. A. Bell, who in 1905 presented to the College a tract of 10,000 acres of timber land called Manitou Park, the foundation was laid for a Department of Forestry. This work began in 1906, with Dr. William C. Sturgis as Dean.

A Department of Business Administration and Banking has been established this year with the special income of \$6,000 a year. The work offered is designed to meet the needs of students preparing for business, banking, foreign exchange, journalism, consular service, and secretarial work. The Department opened in September, 1914, with Professor Warren M. Persons as Dean.

ORGANIZATION OF THE COLLEGE.

Colorado College was incorporated under the general provisions of Section 5, Article 2, of Chapter 18 of the Revised Statutes of the Territory of Colorado. The Charter, dated February 4, 1874, and filed with the Recorder of El Paso County, Colorado, on February 17, 1874, includes the following articles: "FIRST. The corporate name of said corporation shall be The Colorado College. SECOND. The object of this corporation is to locate and maintain at Colorado Springs under Christian auspices an institution of learning on the college or university plan. THIRD. The number of trustees of said corporation shall be not less than twelve nor more than eighteen. . . . FOURTH. The existence of the said corporation, The Colorado College, is intended to be perpetual."

By a Certificate of Amendment dated June 13, 1907, and filed June 15, 1907 (in the manner prescribed by Chapter 139 of the Session Laws for 1907), to the above articles were added: "FIFTH. Seven of the said trustees present at any meeting shall constitute a quorum, and the Board of Trustees shall have power by vote of a quorum to fill vacancies

in the Board. SIXTH. The said corporation shall never be under the control of a sect; no trustee, officer, member of any faculty, or student shall ever be required to belong to any specified sect and no theological test shall ever be imposed or applied as a condition of entrance in said College or of connection therewith."

The College is authorized to confer degrees by Section 1 of an Act of March 28, 1889 (Session Laws of 1889, p. 121), which states that, "Any corporation, now or hereafter existing for educational purposes, under the laws of this State, which shall maintain one or more institutions of learning of the grade of a university or college, shall have authority by its directors or board of trustees or by such person or persons, as may be designated by its constitution or by-laws, to confer such degrees and grant such diplomas and other marks of distinction as are usually conferred and granted by other universities and colleges of like grade."

Trustees

WILLIAM F. SLOCUM, <i>President of the Board</i>	24 College Place
WILLIS R. ARMSTRONG	1420 Culebra Ave.
GEORGE W. BAILEY	309 McPhee Building, Denver
JUDSON M. BEMIS	506 N. Cascade Ave.
IRVING W. BONBRIGHT	14 Wall Street, New York
JOHN CAMPBELL	1401 Gilpin St., Denver
GEORGE A. FOWLER	Broadmoor
IRVING HOWBERT	17 N. Weber St.
WILLIAM S. JACKSON	228 E. Kiowa St.
WILLIAM LENNOX	1001 N. Nevada Ave.
CHARLES M. MACNEILL	301 Mining Exchange Building
HENRY McALLISTER, JR.	1880 Gaylord St., Denver
GEORGE FOSTER PEABODY	Lake George, New York
E. P. SHOVE	1329 Wood Ave.
PHILIP B. STEWART	1228 Wood Ave.
MAHLON D. THATCHER	Hill Crest, Pueblo
FRANK TRUMBULL	71 Broadway, New York

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EDWARD SMITH PARSONS, *Vice-President.*

WILLIAM WALLACE POSTLETHWAITE, *Treasurer.*

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Secretary—MANLY DAYTON ORMES.

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Prof. Florian Cajori.	Mrs. Charles Peabody.
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Mrs. Robert Kerr.

Faculty

WILLIAM FREDERICK SLOCUM, D.D., LL.D. 24 College Place
President and Head Professor of Philosophy.

A.B. (Amherst) '74; B.D. (Andover) '78; LL.D. (Amherst) '93;
 LL.D. (Nebraska) '94; D.D. (Beloit) '01; LL.D. (Illinois Col-
 lege) '04; LL.D. (Harvard) '12; Colorado College, '88.

JOSEPH VALENTINE BREITWIESER, PH.D. 322 E. San Miguel St.
Professor of Philosophy and Education.

A.B. (Indiana University) '07; A.M. (ibid.) '08; PH.D. (Columbia)
 '10; Colorado College, '10.

MARIANNA BROWN, A.M. McGregor Hall
Registrar.

A.B. (Earlham College) '76; A.M. (Cornell) '94; Colorado College, '02.

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*Dean of the Department of Engineering and
 Head Professor of Mathematics.*

S.B. (Wisconsin) '83; M.S. (ibid.) '86; Ph.D. (Tulane) '94; LL.D.
 (University of Colorado) '12; LL.D. (Colorado College) '13; Sc.D.
 (Wisconsin) '13; Colorado College, '89.

MOSES CLEMENT GILE, A.M., Litt.D. 1121 N. Tejon St.
Head Professor of Classical Language and Literature.

A.B. (Brown) '83; A.M. (ibid.) '86; Litt.D. (Brown and Colorado Col-
 lege) '13; Colorado College, '92.

ELIJAH CLARENCE HILLS, PH.D., Litt.D. 12 College Place
Head Professor of Romance Languages and Literatures.

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A.B. (Indiana) '94; Ph.D. (Cornell) '01; Colorado College, '07.

RUTH LOOMIS, A.B. Bemis Hall
Dean of Women.

A.B. (Vassar) '85; Colorado College, '96.

*Absent during the year, 1914-'15.

FRANK HERBERT LOUD, PH.D. 1203 N. Tejon St.
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A.B. (Amherst) '73; A.M. (Harvard) '99; Ph.D. (Haverford) '00;
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A.B. (Allegheny) '01; Colorado College, '09.

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Librarian.

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A.B. (New York) '75; E.M. (Columbia School of Mines) '78; A.M. (ibid.) '79; Sc.D. (Colorado College) '13; Colorado College, '80.

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 S.B. (Massachusetts Institute of Technology) '81; Colorado College, '09.

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 A.B. (Williams) '02; A.M. (Harvard) '04; Colorado College, '06.

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Assistant Professor of Graphics.
 C.E. (Princeton) '93; Colorado College, '03.

JAMES WILLIAMS PARK,* A.B. 1335 N. Nevada Ave.
Assistant Professor of Public Speaking.
 A.B. (Amherst) '03; Colorado College, '07.

JOHN CARL PARISH, Ph.D. Plaza Hotel
Assistant Professor of History.
 M.Di. (Iowa State Teachers' College) '02; Ph.B. (State University of Iowa) '05; A.M. (ibid.) '06; Ph.D. (ibid.) '08; Colorado College, '14.

MARION EDWARDS PARK, A.M. 1121 N. Tejon St.
Assistant Professor of Greek and Latin.
 A.B. (Bryn Mawr) '98; A.M. (ibid.) '99; Colorado College, '02-'06; '14.

MARIE A. SAHM, A.M. 114 E. Uintah St.
Assistant Professor of German and of the History of Art.
 A.B. (Colorado College) '07; A.M. (ibid.) '08; Colorado College, '07.

*Absent during the year, 1914-'15.

ROLAND RAY TILESTON, A.M. 801 N. Weber St.
Assistant Professor of Physics.

A.B. (Dartmouth) '07; A.M. (ibid.) '11; Colorado College, '13.

HORACE BURRINGTON BAKER, B.S. Administration Bldg.
Instructor in Biology.

B.S. (Michigan) '10; Colorado College, '13.

ALFRED ATWATER BLACKMAN, M.D. 19 E. Cache la Poudre St.
Medical Adviser.

M.D. (Denver University) '02; Colorado College, '04.

MARCUS AUSTIN BLAKEY, B.S. in M.E. Administration Bldg.
Director of the Shops.

B.S. in M.E. (University of Colorado) '12; Colorado College, '13.

MELICENT AMY CAMPBELL, A.B. 1121 N. Tejon St.
Instructor in French and Spanish.

A.B. (Colorado College) '10; Colorado College, '14.

EVA TOLMAN CANON, A.B. Bemis Hall
Assistant Librarian.

A.B. (Colorado College) '04; Colorado College, '08.

GUY WENDELL CLARK, A.M. 318 E. St. Vrain St.
Instructor in Chemistry.

A.B. (Colorado College) '12; A.M. (ibid.) '13; Colorado College, '12.

ELEANOR SOUTHGATE DAVIS Montgomery Hall
Instructor in Physical Education for Women.

Graduate (Boston Normal School of Gymnastics) '07; Colorado College, '14.

JEAN DUPERTUIS, A.B. Administration Bldg.
Teaching Fellow in French.

A.B. (Colorado College) '14; Colorado College, '14.

ALBERT RUSSELL ELLINGWOOD, A.B., B.C.L. 1514 N. Weber
Instructor in Political Science.

A.B. (Colorado College) '10; B.C.L. (Oxford) '13; Colorado College, '14.

- DORIS GREENE 1211 N. Corona St.
Cataloguer in the Library.
 Graduate (University of Wisconsin Library School) '11; Colorado College, '13.
- FREDERICK REED HASTINGS, A.M. 124 W. Columbia St.
Lecturer on History of Philosophy.
 Ph.B. (Colorado College) '91; A.M. (ibid.) '92; Colorado College, '99.
- EDWARD JUNG E HICKOX, A.B., B.P.E. 927 N. Weber St.
Instructor in Physical Education.
 A.B. (Ohio Wesleyan) '05; B.P.E. (International Y. M. C. A. College) '14; Colorado College, '14.
- JOSEPHINE KELLERMANN 1342 N. Wahsatch Ave.
Instructor in German.
 Höhere Töchter Schule Bonn; Colorado College, '11.
- ROBERT AUGUSTUS KLAHR, A.B., M.C.S. 816 N. Weber St.
Instructor in Accounting.
 A.B. (Dartmouth) '08; M.C.S. (ibid.) '09; Colorado College, '14.
- FRANK MORRIS OKEY, B.C.E. 2219 N. Tejon St.
Instructor in Civil Engineering.
 B.C.E. (Iowa State College) '04; Colorado College, '14.
- CLAUDE JAMES ROTHGEB 1211 N. Weber St.
Director of Athletics, and Instructor in Physical Training.
- RAY JAMES SCARBOROUGH, A.M. 1427 N. Royer St.
Instructor in Geology.
 A.B. (Nebraska) '09; A.M. (ibid.) '13; Colorado College, '14.
- LOIS ELLETT SMITH, A.B. McGregor Hall
Instructor in Biology.
 A.B. (Colorado College) '12; Colorado College, '12.
- WALKER VAN RIPER, A.B., LL.B. 1010 N. Wahsatch Ave.
Instructor in Banking.
 A.B. (Yale) '09; LL.B. (St. Louis University) '12; Colorado College, '14.

EDWARD DANFORTH HALE, A.M. 1424 N. Nevada Ave.
Dean of the Department of Music, and Professor of the Theory and Literature of Music and the Pianoforte.

A.B. (Williams) '80; A.M. (ibid.) '83; Professor at the New England Conservatory, '85-'04; Colorado College, '05.

HENRY HOWARD BROWN 1716 Wood Ave.
Instructor in Voice Culture.

Pupil of E. W. Glover (Ass't Director for Cincinnati May Festivals) '00; J. A. Broeckhaven, '00-'01; James Sauvage, '01; Dora Topping, '02-'04; Max Spicker, '03-'06; Amherst Webber (Coach of MM. J. and E. de Reszke, Mmes. Nordica, Eames, and others) '05; Colorado College, '14.

MRS. GEORGE MAXWELL HOWE 1811 N. Nevada Ave.
Instructor in Violin.

Cincinnati Conservatory of Music, '01-'03; Stanton College, Natchez, Miss., '03-'05; Sternsches Konservatorium, Berlin, '05-'06; Woman's College, Columbia, S. C., '06-'07; Colorado College, '10.

LOTA MERRIS 1815 N. Nevada Ave.
Instructor in Voice Culture and Public School Music.

Colorado College and School of Music, '07-'09; Oberlin Conservatory, '12-'13; Pupil of Oscar Saenger and W. J. Falk, '10; H. Howard Brown, '10-'14; Colorado College, '14.

EXCHANGE PROFESSORS AND LECTURERS.

AT COLORADO COLLEGE.

LAWRENCE JOSEPH HENDERSON, M.D.

Assistant Professor of Biological Chemistry at Harvard University.
Exchange Professor in Biological Chemistry in the second half-year, 1914-'15.

AT HARVARD UNIVERSITY.

JAMES WILLIAMS PARK, A.B.

Assistant Professor of Public Speaking.

Exchange Professor at Harvard University for the full year, 1914-'15.

Secretaries

MAUDE SMITH BARD 314 E. Monument St.
Secretary to the President.
 Colorado College, '12.

BARBARA KENDALL, A.B. Bemis Hall
Secretary to the Dean of Women.

A.B. (Radcliffe) '13; Colorado College, '14.

MRS. JOSIE RAMBO MORROW, A.B. 2116 N. Nevada Ave.
Secretary to the Dean of the Department of Arts and Sciences.

A.B. (University of Kansas) '06; Colorado College, '10.

Committees of the Faculty, 1914-1915

Administration—Mr. Slocum, Miss Brown, Mr. Gile, Mr. Hills, Miss Loomis, Mr. Parsons, Mr. Persons, Mr. Schneider, Mr. Strieby, Mr. Thomas.

Accredited Schools—Mr. Breitwieser, Mr. Motten.

Advanced Degrees—Mr. Hills, Mr. Parsons, Mr. Persons, Mr. Schneider.

Athletics—Mr. Schneider, Miss Davis, Mr. Hickox, Miss Loomis, Mr. Moore, Mr. Motten, Mr. Rothgeb, Mr. Thomas.

Catalogue—Mr. Noyes, Miss Brown, Mr. Ellingwood, Mr. Moore.

Chapel Officer—Mr. Noyes.

College Lecture Course—Mr. Woodbridge, Mr. Tileston, Mr. Van Riper.

Hagerman Hall—Mr. Motten, Mr. Baker, Miss Campbell, Mrs. Motten, Mrs. Terry, Mrs. Thomas.

Individual Courses—Mr. Parsons, Miss Brown, Miss Loomis, Mr. Noyes, Mr. Thomas, Mr. Woodbridge.

Library—Mr. Ormes, Miss Canon, Mr. Parish, Mr. Persons, Mr. Slocum.

Music—Mr. Hale, Mr. Ellingwood, Mrs. Howe, Miss Merris, Mr. Parsons, Miss Sahm.

Publications—Mr. Hills, Mr. Cajori, Mr. Howe, Mr. Schneider, Mr. Slocum.

Publicity—Mr. Howe, Mr. Baker, Mr. Noyes, Mr. Parish.

Schedule—Mr. Albright, Mr. Clark, Mr. Parish, Mr. Terry, Mr. Thomas.

Scholarships—Mr. Slocum, Miss Brown, Mr. Hills, Miss Loomis, Mr. Parsons.

Social Life—Mr. Slocum, Miss Brown, Mr. Hills, Miss Loomis, Mr. Parsons, Mr. Schneider.

Student Activities—Mr. Motten, Miss Loomis, Miss Sahm, Mr. Tileston.

Student Self-Help—Mr. Motten, Mr. Moore, Mr. Strieby.

Class Officers

<i>Senior</i>	Mr. Slocum
<i>Junior</i>	Mr. Breitwieser
<i>Sophomore</i>	Mr. Schneider
<i>Freshman</i>	Mr. Hills
<i>Special</i>	Mr. Noyes

Admission

REGISTRATION.

Before registering, each candidate must present to the Dean a certificate of moral character, signed by some responsible person in the community in which he has made his home. The College reserves the right to exclude at any time students whose conduct or academic standing renders them undesirable members of the college community; and in such cases, the fees due the college are not refunded or remitted. School authorities are asked to mail credits direct to the Registrar.

Students are required to register promptly and attend the first exercise in their courses. A fee for late registration will be charged as follows: \$1.00 for registration, first half-year, later than noon on Saturday, September 18, 1915; \$1.00 for registration, second half-year, later than noon on Saturday, January 29, 1916.

ENTRANCE REQUIREMENTS FOR

COURSES LEADING TO THE DEGREE OF BACHELOR OF ARTS AND THE
DEGREE OF BACHELOR OF ARTS IN BUSINESS ADMINIS-
TRATION AND BANKING.

1. ENGLISH, 3 units.*
2. HISTORY, 1 unit.
3. MATHEMATICS, 2 units (preferably 3).
4. LATIN, GERMAN or FRENCH, 4 units, of which 2 must be Latin.†
5. SCIENCE, 2 units (to be selected from the list of sciences given below in 6; but the student is advised to offer Chemistry and Physics. If the student offers Greek, only one unit of science is required).
6. ELECTIVES, sufficient to make a total of 15 units.
 - English, 1 unit.
 - Greek, 1, 2, or 3 units.
 - German, 1 or 2 units.
 - French, 1 or 2 units.
 - Spanish, 1 or 2 units.

*A unit is a course covering a school year of not less than 35 weeks, with 4 or 5 periods of at least 45 minutes each a week. Only one unit of deficiency is allowed for entrance.

†If a student has not taken preparatory Latin, but brings 15 other units of acceptable work, he will be allowed to begin Latin in college, the work counting toward his degree.

Mathematics, 1 unit.
 History, 1 or 2 units.
 Civil Government, $\frac{1}{2}$ unit.
 Chemistry, 1 unit.
 Physics, 1 unit.
 Physiology, $\frac{1}{2}$ unit.
 Zoology, $\frac{1}{2}$ unit.
 Botany, $\frac{1}{2}$ unit.
 Physiography, $\frac{1}{2}$ unit.
 Geology, $\frac{1}{2}$ unit.
 Mechanical Drawing, 1 unit.

ENTRANCE REQUIREMENTS

FOR

COURSES LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN
ENGINEERING AND THE DEGREE OF FOREST ENGINEER.

(15 UNITS.)

The requirements for admission to the engineering courses are as follows:

1. MATHEMATICS (3 units)—(a.) Algebra through simultaneous quadratic equations; (b.) Elementary Plane Geometry; (c.) Solid and Spherical Geometry; (d.) Review Algebra, Ratio and Proportion, Binomial Theorem, Arithmetical and Geometrical Progressions, Elements of Permutations and Combinations. Plane Trigonometry is desirable but not necessary. A thorough preparation is of great importance.
2. PHYSICS (1 unit)—One year's course. See p. 27.
3. CHEMISTRY (1 unit)—One year's course. See p. 27.
4. ENGLISH (3 units)—As in the College of Arts. See p. 23.
5. FOREIGN LANGUAGES (2 units)—Two years. See p. 26.
6. AMERICAN, AND ENGLISH OR ANCIENT HISTORY (1 unit)—One year's course in each. See p. 25.
7. ELECTIVES (4 units)—Preferably in modern languages and History. See pp. 25-26.

Candidates who offer satisfactory evidence of having completed a preparatory course equivalent to the above requirements will be admitted without condition into the Freshman Class. Each candidate must bring from the principal of the school last attended a personal statement as to his grade of scholarship.

Students who have had a high school course in trigonometry may receive advanced standing in this subject in the Department of Engineering by passing an examination at the beginning of the college year.

The Faculty accepts credits from other colleges of good standing. All credits should be mailed to the Registrar.

UNIT COURSES IN PARTICULAR SUBJECTS.

1. ENGLISH—(3 units).

- (a) A practical knowledge of grammar and the elements of rhetoric.
- (b) A careful study of the following works, recommended by the Conference on Uniform Entrance Requirements in English, from the point of view of explanation of allusions, meanings of unusual words, acquaintance with the periods of literary history represented, etc., as well as that of subject matter, structure, and literary quality:

Shakespeare's *Macbeth*; Milton's *Comus*, *L'Allegro*, and *Il Penseroso*; Burke's *Speech on Conciliation with America*, or Washington's *Farewell Address* and Webster's *First Bunker Hill Oration*; Macaulay's *Life of Johnson*, or Carlyle's *Essay on Burns*.

- (c) A less minute study of the following works, sufficient to give the candidate a clear idea of their important parts:

READING.—Group I. (Two to be selected): *The Old Testament*, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther; Homer's *Odyssey*, with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII; Homer's *Iliad*, with the omission, if desired, of books XI, XIII, XIV, XV, XVII, XXI; Vergil's *Aeneid*. The *Odyssey*, *Iliad*, and *Aeneid* should be read in English translations of recognized literary excellence. *For any unit of this group a unit from any other group may be substituted.*

Group II. (Two to be selected): Shakespeare's *Merchant of Venice*, *Midsummer Night's Dream*, *As You Like It*, *Twelfth Night*, *Henry the Fifth*, *Julius Cæsar*.

Group III. (Two to be selected): Defoe's *Robinson Crusoe*, Part I; Goldsmith's *Vicar of Wakefield*; Scott's *Ivanhoe*, or *Quentin Durward*; Hawthorne's *The House of the Seven Gables*; Dickens's *David Copperfield*, or *Tale of Two Cities*; Thackeray's *Henry Esmond*; Mrs. Gaskell's *Cranford*; George Eliot's *Silas Marner*; Stevenson's *Treasure Island*.

Group IV. (Two to be selected): Bunyan's *Pilgrim's Progress*, Part I; The *Sir Roger de Coverley Papers* in the *Spectator*; Franklin's *Autobiography*, (condensed); Irving's *Sketch Book*; Macaulay's *Essay on Lord Clive*, and *Essay on Warren Hastings*; Thackeray's *English Humourists*; *Selections from Lincoln*, including at least the two *Inaugurals*, and the *Speeches in Independence Hall* and at *Gettysburg*, *Last Public Address*, *Letter to Horace Greeley*, together with a brief memoir or estimate; Parkman's *Oregon Trail*; Thoreau's *Walden*, or Huxley's *Autobiography*, and *Selections from Lay Sermons*, including the addresses on *Improving Natural Knowledge*, *A Liberal Education*, and *A Piece of Chalk*; Stevenson's *Inland Voyage*, and *Travels With a Donkey*.

Group V. (Two to be selected): Palgrave's *Golden Treasury* (First Series) Books II and III, with especial attention to Dryden, Collins, Gray, Cowper, and Burns; Gray's *Elegy in a Country Churchyard*, and Goldsmith's *Deserted Village*; Coleridge's *Ancient Mariner*, and Lowell's *Vision of Sir Launfal*; Scott's *Lady of the Lake*; Byron's *Childe Harold*, Canto IV, and *The Prisoner of Chillon*; Palgrave's *Golden Treasury* (First Series) Book IV, with especial attention to Wordsworth, Keats, and Shelley; Poe's *Raven*; Longfellow's *Courtship of Miles Standish*, and Whittier's *Snow Bound*; Macaulay's *Lays of Ancient Rome*, and Arnold's *Sohrab and Rustum*; Tennyson's *Gareth and Lynette*, *Lancelot and Elaine*, and *The Passing of Arthur*; Browning's *Cavalier Tunes*, *The Lost Leader*, *How They Brought the Good News from Ghent to Aix*, *Home Thoughts from Abroad*, *Home Thoughts from the Sea*, *Incident of the French Camp*, *Hervé Riel*, *Pheidippides*, *My Last Duchess*, and *Up at a Villa—Down in the City*.

Although the books mentioned above are recommended as preparation for this part of the requirement, they are not prescribed. Books of equal merit, covering a similar range of literary types, will be accepted as equivalents.

2. HISTORY—(1 unit.) An outline knowledge of the leading facts of either Ancient, Greek and Roman, Mediaeval and Modern, American, or English History.

- (a) Ancient History: Myers and Botsford, Myers, West, or an equivalent.
- (b) Greek and Roman: Botsford, Allen, or an equivalent.
- (c) Mediaeval and Modern: Myers, or an equivalent.
- (d) American: Channing, McLaughlin, Thomas, Johnston, or an equivalent.
- (e) English: Larned, Coman and Kendall, or an equivalent.

3. MATHEMATICS—(2 or 3 units.)

- (a) Algebra, through simultaneous quadratic equations ($1\frac{1}{2}$ units).
- (b) Elementary Plane Geometry; the first five books of Phillips and Fisher's, Wells's, or Wentworth's *Geometry*, or an equivalent (1 unit).
- (c) Solid and Spherical Geometry ($\frac{1}{2}$ unit).
- (d) Plane Trigonometry ($\frac{1}{2}$ unit).

It is recommended that Algebra and Plane Geometry be reviewed in the last year of the preparatory course.

4. LATIN—

- (a) An accurate and ready knowledge of grammatical forms. *Cæsar's Gallic Wars*, Bks. I.-IV., or an equivalent. Prose Composition based on Cæsar. Careful attention should be given from the beginning to correct pronunciation of the Latin and to the use of idiomatic English in translation. (2 units.)
- (b) Cicero: Seven orations. The following are recommended: The four orations against Catiline, Archias, the Manilian Law, Marcellus. Translation at sight of easy passages of prose. Prose Composition. (1 unit.)
- (c) Vergil: *Aeneid*, Bks. I.-VI. Prose Composition based on Cicero. (1 unit.)

5. GREEK—

- (a) White's First Greek Book, or an equivalent. Xenophon's *Anabasis* (20 or 30 pages). Practice in sight translation. The rules of accentuation. (1 unit.)

- (b) Four books of the *Anabasis*. Reading at sight. Prose Composition based on the *Anabasis*. Careful grammatical study. (1 unit.)
- (c) Three books of the *Iliad* with prosody and dialectic forms. Sight translation. Prose Composition. (1 unit.)

6 GERMAN, FRENCH, AND SPANISH—(1 or 2 units).

- (a) The work of the first year should comprise: (1) Drill in the rudiments of grammar; (2) careful drill in pronunciation; (3) the memorizing and frequent repetition of easy colloquial sentences; (4) abundant easy exercises; (5) the reading in graduated texts of from 75 to 100 pages of German, or from 100 to 175 pages of French or Spanish prose.
- (b) The work of the second year should comprise: (1) The careful reading of from 150 to 200 pages of German literature, or from 250 to 400 pages of French or Spanish literature, in the form of easy stories or historical or biographical sketches; (2) practice in the translation, from English, of easy variations from the matter read, and also in free reproduction, sometimes orally and sometimes in writing, of the substance of short and easy selected passages; (3) continued drill in the rudiments of grammar.

A good selection of texts for the second year, arranged in suitable order for reading, would be:

GERMAN: Andersen, *Märchen* or *Bilderbuch*; Leander, *Träumereien*; Hauff, *Das kalte Herz*; Zschokke, *Der zerbrochene Krug*; Hillern, *Höher als die Kirche*; Storm, *Immensee*; Baumbach, *Der Schwiegersohn*; Heyse, *L'Arrabiata*, *Das Mädchen von Treppi*, *Anfang und Ende*; Jensen, *Die Braune Erica*.

FRENCH: (1) Mairat, *la Tâche du petit Pierre*; Malot, *Sans famille*, or Bruno, *le Tour de la France*; (2) Labiche et Martin, *le Voyage de M. Perrichon*; Halévy, *l'Abbé Constantin*, or Mérimée, *Colomba*; (3) Dumas, *la Tulipe noire*, or Erckmann-Chatrian, *Madame Thérèse*; (4) Sarcy, *le Siège de Paris*, or Lamartine, *Jeanne d'Arc*; (5) Daudet, *Contes*, or George Sand, *la Mare au diable*.

SPANISH: (1) Valera, *El pájaro verde*, and Alarcón *El Capitán Veneno*, or about 150 pages of selected short stories; (2) Pérez Galdós, *Doña Perfecta* or *Marianela*;

(3) Echegaray, *Ó locura ó santidad*, Ramos y Vidal, *Zaragüeta*, or Moratín, *El sí de las niñas*.

A third and a fourth year of German or French will be accepted as an elective entrance subject, if the work has been done satisfactorily. Candidates are advised to present two units of German, French or Spanish, as preparatory to admission to the German 2, French 2, or Spanish 2, given in the college.

7. PHYSICS—(1 unit). Not less than two hours a week of recitation and four of laboratory work; Millikan and Gale's *First Course in Physics*; Carhart and Chute's *Elements of Physics*, or an equivalent.
8. CHEMISTRY—(1 unit). Williams' *Elements of Chemistry*, or an equivalent.
9. PHYSIOLOGY—($\frac{1}{2}$ unit). Text book work should cover such a text as Blaisdell's *Practical Physiology*. In addition, the course should include a rough dissection, by the teacher, of the frog and cat, and a microscopic examination of the more important tissues.
10. ZOÖLOGY—($\frac{1}{2}$ unit). Textbook work equal in amount to that contained in Kellogg, Jordan, or Davenport; laboratory work on the structure of at least ten forms and a comparison with other types. The drawings and descriptions in the candidate's laboratory notebook must be certified by the teacher.
11. BOTANY—($\frac{1}{2}$ unit). A knowledge of the structure and more important physiological processes of flowering plants, of the modifications of parts for special functions, of the plant societies, of pollination and dissemination. It is also desirable that the candidate have the ability to identify ordinary seed plants. A laboratory notebook certified by the teacher must be presented by the candidate. Such texts as Bergen's *Foundation of Botany* and Coulter's *Plant Studies* are recommended.
12. PHYSIOGRAPHY—($\frac{1}{2}$ unit). Tarr, Davis, Dryer, or an equivalent.
13. GEOLOGY—($\frac{1}{2}$ unit). Scott's *Introduction to Geology*, or an equivalent, with practice in the determination of the commoner rocks, igneous, sedimentary, and metamorphic.
14. MECHANICAL DRAWING—(1 unit).

ADMISSION BY CERTIFICATE.

Candidates who offer satisfactory evidence of having completed a preparatory course equivalent to the above requirements will be admitted without condition into the Freshman Class. Each candidate must bring from the principal of the school last attended a personal statement as to his grade of scholarship.

ACCREDITED SCHOOLS.

The following schools are on the accredited list. A certificate of the satisfactory completion, in any of them, of any study required for admission to the College, will be accepted:

Alamosa High School.	Lamar High School.
Arvada High School.	Las Vegas High School.
Aspen High School.	Leadville High School.
Cañon City High School.	Littleton High School.
Cañon City So. Side High School.	Longmont High School.
Central City High School.	Loveland High School.
Cheyenne County High School.	Manitou High School.
Cheyenne (Wyo.) High School.	Manzanola High School.
Colorado City High School.	Monte Vista High School.
Colorado Springs High School.	Montrose High School.
Cripple Creek High School.	Ogden, Utah, High School.
Delta High School.	Omaha, (Neb.) High School.
East Denver High School.	Otero Co. High School, La Junta.
North Denver High School.	Ouray High School.
West Denver High School.	Palisades High School.
South Denver High School.	Paonia High School.
Denver Manual Train. High School.	Pueblo High School, Dist. No. 1.
Douglas Co. H. S., Castle Rock.	Pueblo High School, Dist. No. 20.
Durango High School.	Rocky Ford High School.
Eaton High School.	Rowland Hall, Salt Lake City.
Florence High School.	Saguache Co. High School.
Fort Collins High School.	Salida High School.
Fort Morgan High School.	Salt Lake City High School.
Fountain High School.	State Teacher's College High School.
Fruita High School.	Sterling High School.
Georgetown High School.	St. Stephen's Academy.
Glenwood Springs High School.	Telluride High School.
Golden High School.	Trinidad High School.
Grand Junction High School.	Victor High School.
Greeley High School.	Walsenburg High School.
Gunnison High School.	Wheat Ridge High School, Alcott.
Holly High School.	Miss Wolcott's School, Denver.
Holyoke High School.	Windsor High School.
Idaho Springs High School.	

Certificates from schools not on the accredited list will be considered as the merits of each case may warrant.

ADMISSION TO ADVANCED STANDING.

Students who offer satisfactory evidence of having completed studies equivalent to those offered by the College will be received into advanced classes. The Faculty usually receive certificates from other colleges, but reserve the right to examine any candidate.

SPECIAL STUDENTS.

Special students will be received, at the discretion of the Faculty, into such classes as they are qualified to enter. It is the rule of the College that such students must attend the examinations as well as the ordinary recitations of their classes, subject to the same conditions as other students.

Several of the courses of lectures which form part of the College instruction, particularly in the department of Philosophy, are open to the public on payment of a fee of \$5.00 for each half-year course (see p. 126), and without any requirements of examination.

REQUIREMENTS FOR DEGREES

DEGREE OF BACHELOR OF ARTS.

In the Department of Arts and Sciences, only one degree is given, that of Bachelor of Arts. To secure this the student is required to complete a course of study consisting of (1) certain prescribed studies, (2) a specified number of hours in a major subject, (3) enough free electives to bring his work up to the total requirement of 120 hours of scholastic work, making an average of 15 hours a week throughout the four years.* In addition he is further required to complete 6 hours' work in Physical Education (pp. 78-81). The credit unit is 1 hour per week for a half-year. In courses continuing throughout the year no credit is given for a half-year's work. To satisfy the requirements for the degree of Bachelor of Arts, a student must obtain a grade above 69% in at least one-half the hours taken in Colorado College. It is recommended that students who are planning to work their way, in large part, through College, take five years for their course. No student will be allowed to take a degree from Colorado College who has not completed at least one full year's work in residence at the institution.

REQUIRED SUBJECTS.

All candidates for the degree of A.B. must, in addition to their elective hours, have finished the following prescribed courses: English 1, 2, and 4, 5, or 9; Mathematics 1, 2, and 3; two years of foreign language, one year of science, one year of history, Economics 1 or Political Science 1; Philosophy 1, 2, and 3. In order to maintain regularity in classification, these subjects should be taken as scheduled below.

COURSE OF PRESCRIBED STUDY.

FRESHMAN YEAR. . . . Mathematics 1, 2, and 3, first half-year, 3 hours; second half-year, 5 hours.†

English 1, each half-year, 3 hours.

Other subjects, as below, to make a total of 15 hours.

†Greek, Latin, German, French, or Spanish, either one or two courses, each half-year, 3 or 6 hours.

†Science: Biology, Chemistry, or Physics, one course, each half-year, 3 hours.

*Except in the course leading to the degree of Bachelor of Arts in Business Administration and Banking (see p. 32).

†Students offering Solid Geometry for admission are not required to take Math. 2.

†Two years of foreign language (two years in one language or one year in each of two languages), and one year of science is prescribed for graduation. This work should, if possible, be finished in the first two years.

SOPHOMORE YEAR. . . . English 2, and either 4, 5, or 9, each half-year, 3 hours.

History 10, each half-year, 3 hours.

Science, each half-year, 3 hours (if not taken in the Freshman year).

Foreign language if not completed in Freshman year, each half-year, 3 hours.

Philosophy 1 must be taken in Sophomore year by all intending to take their majors in Philosophy or Education.

JUNIOR YEAR. Philosophy 1, each half-year, 3 hours.

Economics 1, first half-year, 3 hours; or Political Science 1, first half-year, 3 hours.

SENIOR YEAR. Philosophy 2 and 3, 8 hours.

MAJOR SUBJECT.

In addition to the above prescribed subjects, each student shall select a major subject, if possible before the end of the Sophomore year, and, in any case, not later than the beginning of the Junior year. The professor in charge of the major subject will act as the student's adviser, and will have authority, with the Dean, to require the completion of work amounting to 30 hours in the major subject, or in the major subject and in such minor subject as he shall consider necessary, or collateral work. Mention of the major subject will be made in the diploma. No work done in Colorado College will be counted toward the completion of a major subject if the grade is below C (70).

Any one of the following may be selected by the student as his major subject: (1) Philosophy; (2) Education; (3) Greek; (4) Latin; (5) English; (6) German; (7) Romance Languages; (8) Economics; (9) History; (10) Mathematics; (11) Astronomy; (12) Physics; (13) Chemistry; (14) Biology; (15) Geology; (16) Fine Arts.*

All courses except English 1, Mathematics 2, French 1, German 1, Economics 1, and Spanish 1, may be counted as part of the requisite 30 hours.

Petitions to change the major subject will be granted only when approved by the professors in charge of both the old and the new subjects; and the student will be held to all the requirements of the new major subject. In no case may the major subject be changed later than the beginning of the Senior year.

*For description of Fine Arts major, see p. 101.

ELECTIVES.

The student shall elect, in addition to the prescribed subjects and the major subject, a sufficient number of courses to bring the total amount of his College work up to 120 hours (except in Business Administration, (see p. 32).

**REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS
IN BUSINESS ADMINISTRATION AND BANKING.**

The four years' course leading to the degree of Bachelor of Arts in Business Administration and Banking is designed to offer a thorough training in those branches of knowledge fundamental to business, using that term in its broadest sense. It is the aim of the Judson M. Bemis Department of Business Administration and Banking to emphasize those fundamental facts and principles of business which are necessary to its administration, but which are difficult or impossible to acquire in the ordinary routine of work in a complex business organization. The aim is, not to train students in business routine, but to instruct them so that when they enter business they will understand the significance of the work that they happen to be doing in its relation to the whole. A training in economics, finance, law, accounting, insurance, advertising and the like, familiarity with business terms, the reading of commercial journals, and the daily discussion of banking and industrial topics will enable the student to make the transition from college to business more readily than he otherwise could.

The requirements for the degree of Bachelor of Arts in Business Administration and Banking are the same as those for the regular degree of Bachelor of Arts (including the requirements for Physical Education, p. 78) except as follows: Business 12 is required in the Freshman year instead of Mathematics 3; Economics 1 and Economics 17 are required in the Sophomore year in addition to the other requirements (see p. 30); and 68 half-year hours are required in the Junior and Senior years, of which 55 half-year hours are prescribed. For the degree from the Department a standing of C or more is required in thirty hours of the required work in Economics, Political Science and Business included in which must be Business 1 and 5 and either Business 6 or Business 9 and 10.

In planning the course certain considerations have been kept in mind, i. e., to prevent over-specialization by broad requirements in the Freshman and Sophomore years; to develop a professional spirit among the Juniors and Seniors by requiring greater specialization than

obtains under the system of major studies; to secure the elasticity necessary because of the diverse needs of the students by means of options and free electives. Thus, a student planning to enter journalism should elect courses in English, history, and political science; one intending to enter the consular service should elect modern languages, political science, and law; for banking he should elect Economics 10, Business 9 and 10; for actuarial and statistical work he should elect mathematics and Economics 19; for mercantile and manufacturing pursuits he should elect Business 6. Other combinations will suggest themselves to those preparing for chamber of commerce secretaryships, teaching of commercial branches in high schools, etc.

FRESHMAN YEAR.

<i>First Half-Year.</i>	Credit hours per week.	<i>Second Half-Year.</i>	Credit hours per week.
Mathematics 1, p. 68.....	3	Business 12 and Mathemat-	
English 1, p. 50.....	3	ics 2, p. 68.....	5 or 3
Modern Language.....	3	English 1, p. 50.....	3
Science.....	3	Modern Language.....	3
Elective.....	3	Science.....	3
	<hr/> 15	Elective.....	3
			<hr/> 15

SOPHOMORE YEAR.

<i>First Half-Year.</i>	Credit hours per week.	<i>Second Half-Year.</i>	Credit hours per week.
English 30, p. 51.....	3	English 4, 5, or 9, p. 50.....	3
History 1, p. 60.....	2	History 1, p. 60.....	2
Modern Language.....	3	Modern Language.....	3
Economics 1, p. 63.....	3	Economics 17, p. 63.....	3
Electives.....	4	Electives.....	4
	<hr/> 15		<hr/> 15

JUNIOR YEAR.

<i>First Half-Year.</i>	Credit hours per week.	<i>Second Half-Year.</i>	Credit hours per week.
Accounting (Bus. 1) p. 66...	3	Accounting (Bus. 1) p. 66...	3
Elements of Political Science		Money and Banking	
(Pol. Sci. 1) p. 62.....	3	(Econ. 9) p. 64.....	3
Commercial Development		Commerce and Industries	
(Econ. 21) p. 63.....	3	(Bus. 3) p. 66.....	3
Commercial Law		Commercial Law	
(Bus. 5) p. 66.....	3	(Bus. 5) p. 66.....	3
Transportation (Bus. 7) p. 67		Public Finance (Econ. 10) p. 64	
or		or	
Insurance (Econ. 19) p. 64...	2	Labor (Econ. 22) p. 65.....	2
Elective.....	3	Elective.....	3
	<hr/> 17		<hr/> 17

SENIOR YEAR.

<i>First Half-Year.</i>	Credit hours per week.	<i>Second Half-Year.</i>	Credit hours per week.
Business Organization (Bus. 6) p. 67.....	3	Business Organization (Bus. 6) p. 67.....	2
or		or	
Banking Practice (Bus. 9) p. 67		International Banking (Bus. 10) p. 68.....	
Commercial Law (Bus. 13) p. 67	2	Commercial Law (Bus. 13) p. 67	2
Statistics (Econ. 18) p. 64...	3	Corporation Finance (Bus. 4) p. 66.....	3
Advanced Accounting (Bus. 14) p. 66.....	2	Business Cycles (Econ. 23) p. 65.....	2
History of Philosophy (Phil. 2) p. 45.....	4	Ethics (Phil. 3) p. 46.....	4
Elective.....	3	Elective.....	4
	17		17

REQUIREMENTS FOR THE DEGREES OF BACHELOR OF SCIENCE IN CIVIL AND IRRIGATION ENGINEERING

CIVIL ENGINEERING.†

The four years' course leading to the degree of Bachelor of Science in Civil Engineering is designed to afford a thorough analytical training as well as numerous and extended practical exercises in those matters that pertain to the profession of the civil engineer, including all kinds of structures and public works, and also the various developments and applications of power by the use of electric, steam, water, and air motors.

The theoretical portion of the instruction is based largely upon the courses given in the departments of mathematics and physics, and the results obtained are applied to practical engineering work. Special stress is laid upon the design by the student of the various structures and machines which the civil engineer is called upon to construct in the practice of his profession.

The instruction is given by lectures, demonstrations by the student, and frequent conferences, co-ordinate with which the work of design is carried on. It covers comprehensively the subjects of surveying, water supply of cities and towns, irrigation, sanitary engineering, including sewage disposal, graphic and analytic treatment of all metallic structures, foundations, retaining and reservoir walls, high masonry

†The requirements for Physical Education are the same as in the Department of Arts and Sciences, p. 78.

dams, sewer systems, hydraulic engineering, rivers and harbors, hydraulic, steam, and electric motors.*

FRESHMAN YEAR.

<i>First Half-Year.</i>	Credit hours per week.	<i>Second Half-Year.</i>	Credit hours per week.
Algebra (Math. 1) p. 68.....	4	Trigonometry (Math. 3) p. 68.....	4
Advanced Chemistry (Chem. 2) p. 69.....	3	Advanced Chemistry (Chem. 2) p. 69.....	3
Mechanical Drawing (Graphics 1) p. 90.....	2	Descriptive Geometry (Graphics 2) p. 90.....	5
Woodwork (Shop 1) p. 91.....	2	Rhetoric and Comp. (Eng. 1) p. 51.....	3
Rhetoric and Composition (English 1) p. 51.....	3	Modern Language.....	3
Modern Language.....	3	Plane Surveying (Civil 1) p. 81.....	2
Descriptive Geometry (Graphics 2) p. 90.....	1		

Summer Course in Surveying (Civil 201), p. 86, four weeks in Manitou Park, credit 4 hours.

SOPHOMORE YEAR.

<i>First Half-Year.</i>	Credit hours per week.	<i>Second Half-Year.</i>	Credit hours per week.
Analytical Geom. (Math. 4) p. 68.....	3	Analytical Geometry (Math. 5) p. 68.....	2
Differential Calculus (Math. 6) p. 68.....	3	Integral Calculus (Math. 6) p. 68.....	4
Gen. Physics (Phys. 2) p. 75.....	3	Gen. Physics (Phys. 4) p. 76.....	3
Experimental Physics (Phys. 5) p. 76.....	2	Experimental Physics (Phys. 6) p. 76.....	1
Machine Design (Graph. 3) p. 90.....	2	Precision of Measurements (Phys. 8) p. 76.....	1
Modern Language.....	2	Graphic Statics (Graphics 4) p. 90.....	2
		Modern Language.....	2
		Forging (Shop 3) p. 91.....	1
		Field Astronomy (Civil 2) p. 81.....	3

*For ease in reference, associated courses in the departments of Civil Engineering, Irrigation Engineering, and the Summer School of Surveying, as listed on pp. 81-86, are numbered to indicate such association (1, 21, 201, etc.), a group of ten numbers being assigned for each general subdivision.

JUNIOR YEAR.

<i>First Half-Year.</i>	Credit hours per week.	<i>Second Half-Year.</i>	Credit hours per week.
Mechanics (Math. 12) p. 69 . .	3	Mechanics (Math. 12) p. 69 . . .	3
Resistance of Materials (Civil 81) p. 85	3	Resistance of Materials (Civil 81) p. 85	2
Hydraulics (Civil 41) p. 83 . . .	2	Testing Laboratory (Civil 82) p. 85	1
Power Plants (Electrical 15) . .	2	Stresses (Civil 83) p. 85	3
Masonry (Civil 31) p. 83	2	Power Plants (Electrical 15) p. 89	2
Advanced Surveying (Civil 5) p. 81	2	Railway Engineering (Civil 21) p. 82	3
Geology 1, p. 77	3		
Hydraulic Laboratory (Civil 42) p. 84	1		
Railway Curves (Civil 20) p. 82	2		

Summer Courses in Surveying (Civil 221 and Civil 241), p. 86, four weeks in Manitou Park, credit 4 hours.

INSPECTION TRIP.

SENIOR YEAR.

<i>First Half-Year.</i>	Credit hours per week.	<i>Second Half-Year.</i>	Credit hours per week.
Foundations (Civil 33) p. 83 . .	2	Bridge Design (Civil 84) p. 85 . .	4
Bridge Design (Civil 84) p. 85 .	3	Irrigation (Civil 51) p. 84 . . .	3
Masonry Structures (Civil 32) p. 83	2	Sanitary Engineering (Civil 62) p. 84	2
Water Supply (Civil 61) p. 84 . .	3	Roads and Parks (Civil 71) p. 85	2
Elementary Law (Bus. 5) p. 66	3	Electrical Engineering (Electrical 14) p. 89	3
Railway Economics (Civil 22) p. 82	2	Thesis.	
Electrical Engineering (Electrical 14) p. 89	3		
Economics (Econ. 1) p. 63 . . .	3		
Thesis.			

INSPECTION TRIP.

IRRIGATION ENGINEERING.

In order to meet the demands for men trained in the design, location, and construction of irrigation works, a special course in irrigation engineering is offered. The first year of this course is the same as in the Civil Engineering course; the second, third and fourth years differ from the regular Civil Engineering Course in the substitution, for those subjects that bear less directly upon irrigation prob-

lems, of special work in agricultural chemistry, soil physics, advanced work in hydraulics, and the design of stone, timber, and steel irrigation structures. The full equipment of the Civil Engineering department, including surveying instruments, testing machines, hydraulic laboratory and maps and plans, is available to the students of Irrigation Engineering.

The course differs from that in Civil Engineering in the following respects:

SOPHOMORE YEAR.—Civil 2 and Graphics 4 are omitted and Agricultural Chemistry (Chem. 8) is taken during the year.

JUNIOR YEAR.—During the second half-year, Irrigation (Civil 51) and Geology 1 replace Railway Engineering (Civil 21).

SENIOR YEAR.—During the second half-year, Hydraulic Engineering (Civil 43), and Meteorology take the place of Roads and Parks (Civil 71), and Railway Economics (Civil 22).

[The requirements for admission to courses in Civil and Irrigation Engineering are given on page 22. For description of laboratories, see page 112. For Physical Education, see p. 78.]

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING.*

The study of electricity begins in the Sophomore year, when, in the physics course, the student learns the fundamental phenomena of electricity and magnetism, the quantitative statement in mathematical form of their relations; and performs in the laboratory basic experiments which illustrate these phenomena and impress upon the mind the quantitative relations. In the Junior year the experiments are of a more technical and commercial character. The theory is studied in more detail and with the use of the calculus. Particular attention is given in this year to commercial measuring instruments, and to direct-current machines. A portion of the work is performed in accordance with the "preliminary report system," under which the student, from the general principles imparted in the theoretical courses, writes and

*The requirements for Physical Education are the same as in the Department of Arts and Sciences, p. 78.

receives back corrected, before performing a test, a critical statement of the theory and laboratory method of the test to be performed. In the Junior year are also given most of those courses like steam engineering and hydraulic engineering, without which the training of the electrical engineer would be too narrow for practical purposes. In the Senior year the preliminary report system is followed entirely; and the emphasis is placed upon alternating currents, questions of transmission and distribution, and engineering questions of cost.

A certain amount of reading in history, literature and popular science is required during each summer vacation in the course.

FRESHMAN YEAR.

<i>First Half-Year.</i>	Credit Hours per week.	<i>Second Half-Year.</i>	Credit hours per week.
Advanced Chemistry (Chem. 2) p. 69.....	3	Trigonometry (Math. 3) p. 68.....	4
Algebra (Math. 1) p. 68.....	4	Descriptive Geometry (Graphics 2) p. 90.....	5
Drawing (Graphics 1) p. 90....	2	Advanced Chemistry (Chem. 2) p. 69.....	3
Woodwork (Shop 1) p. 91....	2	Pattern-Making (Shop 2) p. 91..	1
Rhetoric and Composition (English 1) p. 51.....	3	Forging (Shop 3) p. 91.....	1
Modern Language.....	3	Rhetoric and Composition (English 1) p. 51.....	3
Descriptive Geometry (Graphics 2) p. 90.....	1	Modern Language.....	3

SOPHOMORE YEAR.

<i>First Half-Year.</i>	Credit hours per week.	<i>Second Half-Year.</i>	Credit hours per week.
Analytical Geometry (Math. 4) p. 68.....	3	Analytical Geometry (Math. 5) p. 68.....	2
Differential Calculus (Math. 6) p. 68.....	3	Integral Calculus (Math. 6) p. 68.....	4
Qualitative Analysis (Chem. 3) p. 70.....	2	Quantitative Analysis (Chem. 4) p. 71.....	3
Experimental Physics (Phys. 5) p. 76.....	2	General Physics (Phys. 4) p. 76.....	3
General Physics (Phys. 3) p. 75.....	3	Experimental Physics (Phys. 6) p. 76.....	2
Machine Design (Graphics 3) p. 90.....	2	Precision of Measurements (Phys. 8) p. 76.....	1
Modern Language.....	2	Mechanism (Graphics 5) p. 91.....	2
		Modern Language.....	2
		Machine Shop (Shop 4) p. 92.....	1

JUNIOR YEAR.

<i>First Half-Year.</i>	Credit hours per week.	<i>Second Half-Year.</i>	Credit hours per week.
Mechanics (Math. 12) p. 69 . . .	3	Mechanics (Math. 12) p. 69 . . .	3
Resistance of Materials (Civil 81) p. 85	3	Resistance of Materials (Civil 81) p. 85	2
Hydraulics (Civil 41) p. 83 . . .	2	Testing Laboratory (Civil 82) p. 85	1
Thermodynamics (Electrical 16) p. 89	2	Alternating-Current Theory (Electrical 2) p. 86	3
Elements of Elect. Eng. (Electrical 1) p. 86	4	Direct Current Elect. Eng. Lab. (Electrical 8) p. 87	3
Advanced Electrical Lab. (Electrical 3) p. 87	2	Electrical Measuring Instru- ments (Electrical 6) p. 87 . . .	1
Elementary Economics	3	Power Plants (Electrical 15) p. 89	2
		Machine Work (Shop 5) p. 92 .	1
		Surveying (Civil 7) p. 82	1

SENIOR YEAR.

<i>First Half-Year.</i>	Credit hours per week.	<i>Second Half-Year.</i>	Credit hours per week.
Alternating-Current Machin- ery (Electrical 5) p. 87	3	Alternating-Current Machin- ery (Electrical 5) p. 87	3
Alternating-Current Elect. Eng. Lab. (Electrical 11) p. 88	3	Electrical Engineering (Electrical 10) p. 88	2
Alternating-Current Instru- ments (Electrical 7) p. 87 . . .	1	Alternating-Current Elect. Eng. Lab. (Electrical 11) p. 88 . . .	2
Electrical Distribution (Electrical 9) p. 88	2	Electrical References (Electrical 13) p. 89	1
Electrical References (Electrical 13) p. 89	1	Hydraulic Engineering (Civil 43) p. 84	2
Elementary Law (Bus. 5) p. 66	3	Engineering Inspections (Electrical 17) p. 89	1
Alternating-Current Measure- ment (Electrical 4) p. 87 . . .	1	Thesis.	
Dynamo Design (Electrical 12) p. 88	1		

REQUIREMENTS FOR THE DEGREE OF FOREST ENGINEER*

The Department of Forestry was established in the spring of 1905. The foundation was laid through the generosity of General Palmer and Dr. Bell, who presented the College a tract of 10,000 acres of land called Manitous Park. Of this, 3,200 acres of agricultural land have been

*The requirements for Physical Education are the same as in the Department of Arts and Sciences, p. 78.

sold, the proceeds being applied toward an endowment for the Department. The remainder of the tract, now known as the Manitou Forest, is timbered and is used for field instruction.

The aim of the Department is to give to students who intend to adopt Forestry as a profession a thorough training which will fit them for positions in the Government Forest Service, or as State Foresters, teachers of Forestry, or expert Foresters in private employ.

The location of the Department of Forestry in the National Forest region enables the College to fit its students particularly for administrative work in the Forest Service. The Department is excellently prepared to give the necessary instruction concerning the relations of the Forest Service with the grazing business, the mining business, and other enterprises characteristic of the West. Its location near the National Forest makes it possible to secure the frequent aid of Forest Service officers for lectures or instruction. Reference to the detailed descriptions of the courses in Timber Estimating, Forest Planting, and Forest Improvement Work, will indicate the possibilities afforded by the National Forests for gaining practical experience in timber cruising, timber sales, planting and nursery practice, grazing, etc.

Students who have completed two years of College work (60 half-year hours), in which the following courses, or their equivalents, have been included, will be admitted to instruction in the Department of Forestry as candidates for the degree of Forest Engineer: Biology 1, and 2 or 3 (p. 72); Chemistry 1 or 2 (p. 69); Civil 1 and 201 (p. 81); Civil 5 and 211 (p. 81); English 1 and 2 (p. 51); German 1 and 3 (p. 54); Geology 1 (p. 77); Mathematics 1, 2, 3 (p. 68) (High School credit for Mathematics 2 is acceptable). Students who studied one or more than one modern language in preparatory school are advised to continue the study of that language in which they are most advanced. A reading knowledge of German is especially desirable. Further, the courses in Economics, Mineralogy, Meteorology, and Physics are commended as elective courses which will materially strengthen the student's Forestry Course.

The course in Forestry covers two years, and from the beginning of the college year until December 1 is conducted in the Manitou Forest, near Woodland Park, Colorado; from December 1 until the spring vacation in Colorado Springs; and from the spring vacation until June 1 in the Manitou Forest. In the Senior year the work of the spring term may be conducted elsewhere.

JUNIOR YEAR.

Half-Year
Hours.*Fall Term, Manitou Forest.*

Forest Mensuration (see Forestry 1, page 92), first half of term..	5
Forest Surveying and Timber Estimating, (see Forestry 2, page 92); second half of term.....	5

Winter Term—Colorado Springs.

Dendrology, (see Forestry 3, page 93); lectures or recitations 5 hours a week and 6 hours of laboratory work.....	5
Wood Technology, (see Forestry 4, page 93); lectures 2 hours a week and laboratory 4 hours.....	2
Silviculture, (see Forestry 5, page 93); lectures 3 hours a week and silvical field studies.....	3
Forest Protection, (see Forestry 6, page 93); lectures 2 hours a week.....	2

Spring Term—Manitou Forest and Monument Nursery.

Silvicultural Operations (see Forestry 7, page 94).....	10
Forest Improvement Work, (see Forestry 8, page 94).....	2

SENIOR YEAR.

Fall Term—Manitou Forest.

Forest Management, (see Forestry 9, page 94); lectures 5 or 6 hours a week and daily field or office work.....	10
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Winter Term—Colorado Springs.

Forest Utilization, (see Forestry 10, page 94); lectures 5 hours a week.....	4
Forest Geography, (see Forestry 11, page 94); lectures or recitations 5 hours a week.....	4
Forest Policy, (see Forestry 12, page 95); lectures or recitations 3 hours a week.....	2

Spring Term.

Lumbering Operations, (see Forestry 13, page 95).....	10
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NOTE:—See also Forestry 3, page 93; Forestry 7, page 94; Forestry 10, page 94.

Advanced Degrees

Permission to do graduate work in Colorado College does not necessarily imply admission to candidacy for the Master's degree. A graduate student who wishes to become a candidate for the degree must make application to the Committee on Advanced Degrees under whose supervision his work will be carried on. He is urged to make

application at an early date, in order that the Committee may have time to pass on his qualifications for admission. The programme of study for the degree and the subject of the dissertation must also be submitted to the committee for approval.

DEGREE OF MASTER OF ARTS

The Master's Degree is conferred subject to the following conditions:

(1) The applicant must have received the Bachelor's degree from some reputable college or university, and must have a reading knowledge of French or German,—preferably both.

(2) The applicant must pursue in residence a minimum course of nine hours of advanced work a week for one year. The work shall include both a major and a minor subject, and at least five hours a week shall be taken in the major subject. In addition, the applicant must present a dissertation that embodies the result of a careful investigation, such dissertation to represent the equivalent of at least three hours of lectures a week for one year. The dissertation must be approved by the heads of the departments in which the major and minor subjects are taken and by a third professor, before the applicant is permitted to present himself for the final examination. The dissertation must be handed in not later than May 15, typewritten on pages 8½ by 11 inches, and a copy deposited with the College librarian.

(3) The final examination shall be oral and public, and it shall be in the presence of the professors in charge of the major and minor subjects and of a third professor. In the examination the applicant must give evidence not only that he has done satisfactorily the minimum requirements, as stated above, but also that he has a satisfactory knowledge of the general fields within which the major and minor subjects lie.

The fees are \$50 a year for tuition, \$5 for the diploma, and \$1 to bind the thesis.

Applications for the Master's Degree should be sent to the Chairman of the Faculty Committee on Advanced Degrees, who will furnish information about courses.

DEGREES OF CIVIL ENGINEER AND ELECTRICAL ENGINEER

The degrees of Civil Engineer (C.E.) and Electrical Engineer (E.E.) will be granted to graduates of Colorado College under the following conditions:

(1) The candidate must have the degree of Bachelor of Science in the course in which he seeks the professional degree.

(2) He must have been in practical work at least three years since receiving his Bachelor of Science degree.

(3) He must be registered and engaged in study under direction two years before he presents himself for his degree.

(4) The assigned work done must be equivalent, in the judgment of the department in which he seeks his professional degree, to fifteen half-year hours.

(5) A thesis upon an approved subject and the record of the candidate's professional experience must be submitted one month before the candidate appears for a degree.

(6) The candidate must appear before a Committee from the Engineering Faculty for an oral examination.

(7) The candidate will be judged by his thesis work and his general engineering knowledge and professional record.

The fees are \$25 each year and \$5 for a diploma.

DEGREE OF MASTER OF FORESTRY

Students who have been awarded a degree other than that of Forest Engineer, either at Colorado College, or at another institution of high standing, may receive the degree of Master of Forestry upon the satisfactory completion of courses equivalent to those required for the degree of Forest Engineer, in Trigonometry, Graphics, Civil Engineering, Botany, Meteorology, Geology, and all courses in Forestry. Students who enter Colorado College with the intention of obtaining the degrees of Bachelor of Arts and Master of Forestry should be able to complete their course in six years. Such candidates for the degree of Bachelor of Arts should, while students in the College of Arts, major in Science. Graduates of other institutions who are candidates for the degree of Master of Forestry should, if they are well grounded in science, be able to obtain this degree in two years. If they have not studied Forestry, they cannot hope to obtain the degree in less than two years.

On account of the increasing demand that the technical forester have a broad, liberal education, the course leading to the degree of Master of Forestry is recommended.

THE HARVARD EXCHANGE.

Three years ago an arrangement was made whereby Harvard University, each year, sends a professor for a half-year to four Western colleges: Colorado College, Grinnell, Knox, Beloit, dividing the time equally among them; and each of them, in return, sends a member of its faculty to Harvard for a half-year, one-third of his time to be given to instruction, and the remainder to graduate or research work.

The fourth Harvard professor to offer work according to this plan, at Colorado College, is

LAWRENCE JOSEPH HENDERSON, M.D.,

Assistant Professor of Biological Chemistry.

Assistant Professor James Williams Park, A.B., Assistant Professor of Public Speaking, is exchange professor at Harvard for the full year, 1914-'15.

Departments of Instruction

PHILOSOPHY.

The required work in this department extends over the Junior and Senior years, and gives the student a knowledge of the development of thought in the several departments of philosophy. The various seminary courses afford training in the study and discussion of important psychological, sociological, and ethical questions.

PRESIDENT SLOCUM, PROFESSOR BREITWIESER.

1. *Psychology and Logic*.—Required of all Juniors. Each half-year, 3 hours.

A. The first twenty-six weeks of the year are given to neurology and psychology, and the remaining nine weeks to logic. The work of the first half-year includes the following topics:

(a) Introduction to psychology and philosophy.—
PRESIDENT SLOCUM.

(b) The anatomy and physiology of the nervous system as bearing on psychology.

(c) Instincts, attention, habit-formation, sensation, and perception.

B. The second half-year is devoted to the remaining topics in psychology and to logic.

In 1914-'15, Angell's *Psychology* was used as a text. The satisfactory performance of a number of experiments is required. Outside assigned readings and the preparation of papers on special topics are also included. The equipment of the psychological laboratory (p. 110) is drawn upon for demonstration material.

PRESIDENT SLOCUM.

2. *History of Philosophy*.—Required of all Seniors, open only to Seniors. Prerequisite, Course 1. First half-year, 4 hours.

A. *Lectures, Recitations, and Conferences*.—3 hours.

(a) Study in Comparative Religions.

(b) Greek Philosophy. 20 lectures.

- (c) Modern Philosophy. Lectures: (1) The Rise and Fall of Scholasticism; (2) The Beginnings of Modern Philosophy—Bacon and Descartes; (3) Spinoza; (4) Locke; (5) The Skeptical Movement in France; (6) Leibnitz; (7) Berkeley; (8) Hume; (9) Kant, the Critique of Pure Reason; (10) Kant, the Transcendent Element in his Philosophy; (11) Hegel; (14) Spencer—The Philosophy of Evolution.

B. *Metaphysical Seminary*.—1 hour.

Papers and discussion upon the following subjects:

- (a) Great Religions of the World.
- (b) Psychological Basis of Religious Faith.
- (c) Psychological Basis of Æsthetics.
- (d) Philosophical Thought in England during the Nineteenth Century.
- (e) Evolution: Its History, Development, and Results.

3. *Ethics*.—Required of all Seniors, open only to Seniors. Prerequisite, Philosophy 2. Second half-year, 4 hours.

A. *Theory of Morals*.—Lectures, theses, and discussions, 3 hours.

- (a) The Fundamental Principles of Ethics. 12 lectures.
- (b) Christian Ethics. 3 lectures.

B. *Ethical Seminary*.—1 hour.

Papers and discussion upon the following subjects:

- (a) Modern Social and Sociological Problems.
- (b) The Ethical View of Citizenship.
- (c) A Study of Educational Theories from an Ethical Standpoint.

4. *Modern German Philosophy*.—Second half, Senior year, 2 hours.

5. *The Philosophical Movement in England*.—Second half, Senior year, 2 hours.

MR. HASTINGS.

13. *The Evolution of Religious Thought*.—Second half-year, 2 hours.

- (1) Psychological Basis of Religion; (2) Spiritual Import of Greek Philosophy; (3) Religious Development of the Hebrews; (4) Rise of Christianity; (5) Source and Substance of Revela-

tion; (6) Paul and His Mission; (7) Fusion of Greek and Christian Thought; (8) Mediæval Conceptions of Christianity; (9) Spirit of the Renaissance; (10) Cardinal Principles of the Reformation; (11) Philosophical Awakening; (12) Eighteenth Century Conceptions of Religion; (13) Skepticism; (14) Voltaire and Rousseau; (15) Lessing and Freedom of Thought; (16) Philosophy of Kant; (17) German Idealism; (18) Mysticism; (19) Romanticism; (20) Goethe: Religion and Culture; (21) German Criticism of Dogma; (22) Coleridge and Wordsworth; (23) Carlyle and His Philosophy of Life; (24) Newman and the Church Revival; (25) Rise of the Critical Mind; (26) Comte and His Religion of Humanity; (27) Agnosticism; (28) Religious Import of Evolution; (29) Arnold and Ethical Idealism; (30) Martineau and Christian Theism; (31) Philosophical Idealism; (32) Present Day Tendencies in Religious Thought.

PROFESSOR BREITWIESER AND ASSISTANTS.

9. *Experimental Psychology*.—A laboratory course. Experimental methods and typical experiments both qualitative and quantitative. Psychological tests and their applications to school problems. For the equipment of the laboratory, see p. 110. Laboratory fee, \$2.50. 1 hour recitation, laboratory hours to be arranged, each half-year, credit 2 hours.
10. *Advanced Course in Psychology*.—Experimental work and reading from psychological literature. Open to students who have completed Philosophy 1. First half-year, 2 hours.
11. *Mental Pathology and Hygiene*.—A study of normal and abnormal suggestion, fixed ideas, morbid-mindedness, insanity, hypnotism, hysteria, multiple personalities, faith cures, etc. Each half-year, 1 hour. Given in 1915-'16 and alternate years. Open to Juniors and Seniors.
12. *Psychology of Religion*.—Open to Juniors and Seniors only. Starbuck, James, Davenport, King, Ames, etc. The genetic and functional points of view in the interpretation of the religious consciousness. First half-year, 1 hour. Given in 1916-'17 and alternate years.
15. *Social Psychology*.—A study of various texts in social psychology, discussions, and selected readings. Second half-year, 1 hour. Given in 1914-'15 and alternate years. Open to students who have had Philosophy 1.

EDUCATION.

PROFESSOR BREITWIESER.

[Education courses are open to Juniors and Seniors only.]

1. *History of Education*.—A study of the more important educational theories and movements in their larger relationships. The historical problems are treated as far as possible from the standpoint of social psychology, and their relation to present day questions is emphasized. Monroe's *A Brief Course in the History of Education* is used as a basis. First half-year, 2 hours.
2. *Modern Educational Development*.—A continuation of the History of Education in which emphasis is put upon the movements affecting present systems. Readings from current educational literature. Second half-year, 2 hours.
3. *Mental Development*.—Kirkpatrick's *Fundamentals of Child Study* and his *Genetic Psychology* are used as a point of departure. Class reports and discussions. First half-year, 2 hours.
4. *Educational Psychology*.—A study of the psychology of pupils in the schools, adolescence, sex, deficient children, environment, and heredity. Second half-year, 2 hours.
5. *Research Work in Problems of Educational Psychology*.—For graduate students and advanced undergraduates. Hours to be arranged. This course gives an excellent opportunity for candidates for the A. M. degree to combine that work with practical work in the Colorado Springs schools.
6. *Practice Teaching*.—This course meets the requirements of the State Board of Examiners concerning Practice Teaching. Provision is made for practice teaching in both primary and secondary grades. Either half-year, 4 hours.
7. *School Problems*.—This course is designed to give practical instruction to those who expect to teach. Reports, discussions, and lectures will be given on school organization, management, teaching, etc. Second half-year, 2 hours.
8. *Religious Pedagogy*.—A study of religious education from the developmental point of view. (Not given in 1914-'15.)

NOTE 1.—The opportunities for practice teaching are made possible by the generous coöperation of the officers and teachers of the public school systems of Colorado Springs and Colorado City, and of the San Luis School.

NOTE 2.—For courses in other departments intended especially for teachers, see Greek 7, Latin 8, English 25, German 12, French 6 and 7, Spanish 5 and 6, Mathematics 4, Physics 11.

GREEK.

PROFESSOR GILE, ASSISTANT PROFESSOR PARK.

1. *Elementary Course*.—Designed to cover the entrance requirements with sufficient fullness to enable a student to enter Greek 2, provided he complete privately during the summer the first four books of the *Anabasis*. Each half-year, 3 hours.
2. Homer, selections from the *Odyssey* and *Iliad* in the original, and the whole of both poems in translation; Plato, *Apology* and *Crito*; Herodotus, selections. Each half-year, 3 hours.
3. *Drama*. Æschylus, *The Septem* and *Prometheus*; Sophocles, *Antigone*; the remainder of Æschylus' and Sophocles' plays in translation; Euripides, *Alcestis* and *Medea*. Each half-year, 3 hours.
4. *History*.
 - (a) Herodotus; careful study of the period of the Persian Wars. Readings from the dramatists for further illustration of the life of the period; or,
 - (b) Thucydides, the Sicilian Expedition. Parallel readings in Curtius, Grote, and other modern historians. Selections from Plutarch's *Lives*. One-half year, 3 hours.
5. *Philosophy*.—Plato, *Phædo*. Selections from other dialogues, and from the works of Xenophon. Zeller's *Socrates and the Socratic Schools*. One half-year, 3 hours.
6. *Epic and Lyric Poetry*.—Homer, Hesiod, and Pindar. One half-year, 3 hours.
7. *A Course Designed for Teachers*.—Selections from Xenophon; composition; careful grammatical study. One half-year, 3 hours.
8. *New Testament Greek*.—Open to students who have had one year of Greek. Second half-year, 3 hours.

NOTE 1.—For a course in Greek Drama for English readers, see English 20; for the classical epic in translation, see English 2.

NOTE 2.—For a course in Greek History, see History 7.

LATIN.

PROFESSOR GILE, ASSISTANT PROFESSOR PARK.

1. Cicero, *De Senectute*, *De Amicitia*, *Selected Letters*; Horace, *Odes*. Each half-year, 3 hours.
2. Horace, Selections from the *Epistles* and *Satires*; Tacitus, *Germania* and *Agricola*; Terence, *Phormio*; Plautus, *Captivi*; Pliny, *Selected Letters*. Each half-year, 3 hours.

3. *Drama*.—Selected plays of Plautus and Terence; history and characteristics of the Roman Drama. One half-year, 3 hours.
4. *Catullus and the Elegiac Poets*.—One half-year, 3 hours.
5. *Satire*.—History and characteristics of Roman Satire. Selections from Horace, Persius, Juvenal. Parallel readings in English literature. One half-year, 3 hours.
6. *Prose Literature of the Empire*.—Gudeman's Selections. Each half-year, 3 hours.
7. *Vergil. The Æneid*, Books VII.-XII.; the *Bucolics*; and selections from the *Georgics*. One half-year, 3 hours.
8. *A Course Designed for Teachers*.—Selections from Cæsar and Cicero; composition; careful grammatical study. One half-year, 3 hours.
9. *A Course in Mythology*.—Lectures, occasionally illustrated, and collateral readings. One-half year, 3 hours.
10. *Roman Life*.—Prerequisites, Latin 1 and 2; open to Juniors and Seniors. One half-year, 3 hours.

NOTE.—For a course in Roman History, see History 8; for the classical epic in translation, see English 2.

ENGLISH.

PROFESSOR PARSONS.

4. † *American Literature*.—Irving, Cooper, Poe, Bryant, Hawthorne, Longfellow, Emerson, Lowell, Holmes, Whittier. Second half-year, 3 hours. Given in 1914-'15 and alternate years.
9. † *The English Drama: Shakespeare*.—The principal plays read chronologically. Second half-year, 3 hours. Given in 1915-'16 and alternate years.
11. * *Milton*.—Poetry and Prose. First half-year, 3 hours. Given in 1915-'16 and alternate years.
12. * *English Poetry from Dryden to Burns*.—First half-year, 3 hours. Given in 1916-'17 and alternate years.

† Course 4 or Course 5, or Course 9, and Course 2 or Course 30, one half-year, 3 hours each, required of all Sophomores. The first three courses are open to Freshmen.

* Not open to Freshmen or Sophomores.

PROFESSORS MOTTEN, NOYES, AND WOODBRIDGE.

1. *Rhetoric and Composition*.—Elementary Course. Required of all Freshmen. Each half-year, 3 hours.

PROFESSORS NOYES AND WOODBRIDGE.

2. *The Greek Epic and Selections from Herodotus* (in translation).—Lang, Leaf, and Myers's *Iliad*, Palmer's *Odyssey*, and selected readings from Herodotus. Weekly themes. First half-year, 3 hours.
23. *Old English*.—The beginnings of English Literature. Reading is begun at once and the study is made as literary in character as possible. First half-year, 3 hours. Given in 1916-'17 and alternate years. (In 1914-'15, given in the second half-year.)
24. *Old English*.—*Beowulf*. Prerequisite, Course 23. Second half-year, 3 hours. Given in 1916-'17, or as arranged.

PROFESSOR MOTTEN.

- 5.†*Outline History of English Literature*.—First half-year, 3 hours. Given in 1916-'17 and alternate years.
- 13.**Wordsworth, Coleridge, Byron, Shelley, Keats*.—Second half-year, 3 hours. Given in 1914-'15 and alternate years.
- 14.**Tennyson*.—First half-year, 3 hours.
- 15.**Browning*.—Prerequisite, Course 14. Second half-year, 3 hours.
- 18.**Poetics*.—A special study of the lyric. Second half-year, 3 hours. Given in 1915-'16 and alternate years.
- 25.**Teachers' Course*.—A study of the classics taught in the grades and high school. Instruction as to methods, texts, references. Practice teaching. Second half-year, 3 hours.
27. *Argument*.—Weekly themes. Supplementary reading. First half-year, 3 hours. Given in 1915-'16 and alternate years.
- 28.**Browning*.—Advanced course. Prerequisite, Course 15. The Ring and the Book and the dramas. First half-year, 2 hours. Given in 1915-'16 and alternate years.
30. *Business English*.—Weekly themes. Supplementary reading. Required course for Sophomores in the Department of Business Administration and Banking. First half-year, 3 hours.

*Not open to Freshmen or Sophomores.

†Course 4, or course 5, or course 9 required of Sophomores; open to Freshmen.

PROFESSOR NOYES.

6. *Chaucer*.—The principal poems read critically in class. Life and thought of the times. Thesis. First half-year, 3 hours.
19. *Nineteenth Century Novelists*.—Jane Austen, Scott, Dickens, Thackeray, George Eliot, Stevenson. Second half-year, 3 hours. Not open to Freshmen. Given in 1916-'17 and alternate years.
20. *Greek Drama for English Readers*.—Literary study of twelve or more dramas of Æschylus, Sophocles, and Euripides, in poetic translation; lectures on the Greek Theater and on Greek Art. Second half-year, 3 hours. Open to Freshmen only in case they have had Latin 9 or English 2. Given in 1915-'16 and alternate years.
26. *Description and Exposition*.—A careful study of methods both by analysis and by practice. Weekly themes. A course in advanced composition. Class limited to fifteen. Offered as an alternate to Course 29, in 1915-'16. Not open to Freshmen. Second half-year, 3 hours. Students wishing to take this course must obtain the previous consent of the instructor.
29. *Representative Essays in Modern Thought*.—Not open to Freshmen. Essays by Arnold, Huxley, Mill, James, Morley, Mallock, Tyndall, Dole, Hadley, Harrison, Morris, Wallace or others. Occasional themes. Not open to Freshmen. Second half-year, 3 hours. Offered in 1916-'17.

PROFESSOR WOODBRIDGE.

3. *Advanced Composition*.—Prerequisite, Course 2. Second half-year, 2 class exercises, credit 3 hours.
- 7.**The English Drama: Through Marlowe*.—Principles and development. First half-year, 3 hours. Given in 1916-'17 and alternate years.
- 8.**The English Drama: From 1590 to 1642, exclusive of Shakespeare*. Second half-year, 3 hours. Given in 1914-'15 and alternate years.
10. *Shakespeare*.—A careful study of the language of three or four plays. Second half-year, 3 hours.
- 16.**Eighteenth Century Prose*.—First half-year, 3 hours. Given in 1915-'16 and alternate years.
- 17.**Nineteenth Century Prose*.—J. S. Mill, Carlyle, Newman, Arnold, Ruskin, Pater. Second half-year, 3 hours. Given in 1915-'16 and alternate years.

* Not open to Freshmen or Sophomores.

21. **Introduction to Literary Criticism*.—Reading and discussion of nineteenth century essays, chosen to represent the most important types of criticism. Occasional themes. First half-year, 3 hours. Given in 1916-'17 and alternate years.
22. **Outline History of Literary Criticism*.—A survey of critical standards from Aristotle to Sainte-Beuve. Second half-year, 3 hours. Given in 1914-'15 and alternate years.

*Not open to Freshmen or Sophomores.

BIBLICAL HISTORY AND LITERATURE.

PROFESSOR PARSONS.

3. *Old Testament History and Literature through the Exodus*.—First half-year, 1 hour. Given in 1916-'17.
4. *Old Testament History and Literature—The Prophets*.—Second half-year, 1 hour. Given in 1914-'15.
6. *The Apostolic Age—History and Literature*.—Second half-year, 1 hour. Given in 1915-'16.
12. *The Life of Jesus*.—Each half-year, 1 hour. Given in 1915-'16.
11. *The Social Teaching of Jesus*.—First half-year, 1 hour. Given in 1915-'16.
15. *Present Day Religious Problems*.—Second half-year, 1 hour. Given in 1914-'15.
13. *Bible Normal Course*.—PRESIDENT SLOCUM. Second half-year, 1 hour.
17. *The Parables of Jesus*.—First half-year, 1 hour. Given in 1916-'17.

NOTE.—For a course in New Testament Greek, see Greek 8.

PUBLIC SPEAKING.†

ASSISTANT PROFESSOR PARK.*

1. *Declamations*.—Oral interpretations, declamations, dramatic reading; individual training. Each half-year, 1 hour.
2. *Orations and Speeches*.—Oral interpretation, discussions, orations, extemporaneous speeches, addresses; individual training. Second half-year, 2 hours.
3. *Debates*.—Lectures; argumentations; debates on social, economic, historical, and political questions. First half-year, 2 hours.

†See Oratorical and Debating Contests, p. 123.

*Absent during the year 1914-'15.

GERMAN LANGUAGE AND LITERATURE.

PROFESSOR HOWE, ASSISTANT PROFESSOR SAHM.

1. *Elementary Course*.—Grammar, Reading, Composition, Conversation. Andersen's *Märchen*; *Immensee*; *Germelshausen*. Each half-year, 3 hours.
2. *Intermediate Course*.—Prerequisite, Course 1. Selected texts in poetry and prose with instruction by the "direct method." Each half-year, 3 hours.
3. *Scientific German*.—Prerequisite, Course 1. For Engineering and Forestry students. Each half-year, 2 hours.
4. *Composition and Conversation*.—Prerequisite, Course 2. First half-year, 2 hours.
5. *Advanced Composition and Conversation*.—Prerequisite, Course 4. Second half-year, 2 hours.
6. *German Lyrics and Ballads*.—Prerequisite, Course 2. First half-year, 2 hours.
7. *Lessing*.—Prerequisite, Course 4 or 6. *Emilia Galotti*, *Nathan der Weise*; biographical sketch. Second half-year, 2 hours.

ADVANCED COURSES.

8. *Schiller*.—Prerequisite, Course 5. *Don Carlos*, *Wallenstein*, *Die Braut von Messina*, *Maria Stuart*, *Die Jungfrau von Orleans*, *Wilhelm Tell*, *Schillers Briefe (Auswahl)*, *Philosophische Schriften (Auswahl)*, *Aus deutschen Lesebüchern V. 2 and 3*, Poems, biography of Schiller. Conducted in German. Each half-year, 2 hours. Given in 1915-'16 and alternate years.
9. *Goethe*.—Prerequisite, Course 5. *Die Laune des Verliebten*, *Die Mitschuldigen*, *Götz von Berlichingen*, *Die Leiden des jungen Werthers*, *Clavigo*, *Stella*, *Egmont*, *Iphigenie auf Tauris*, *Torquato Tasso*, *Hermann und Dorothea*, *Faust*; *Gedichte (Auswahl)*, *Briefe (Auswahl)*, *Italienische Reise (Rom)*; *Aus deutschen Lesebüchern V. 1*; Bielschowsky's *Goethe*. Conducted in German. Each half-year, 2 hours. Given in 1914-'15 and alternate years.
11. *The German Drama of the Nineteenth Century*.—Prerequisite, Course 5. Kleist, Grillparzer, Hebbel, Ludwig; Gutzkow, Wildenbruch, Fulda; Sudermann, Hauptmann. Lectures in German. Especial attention will be given to the works of Kleist, Grillparzer and Hebbel. Conducted in German. Each half-year, 2 hours. Given in 1915-'16 and alternate years.

12. *Teachers' Course*.—Prerequisite, Course 5 and at least one advanced course. A study of German pronunciation and grammar from the standpoint of the teacher. Instruction as to methods, texts, and works of reference. Each half-year, 1 hour.
13. *Current German Literature*.—Required of students who major in German. Each half-year, 1 hour.
14. *Brief History of the German Literature from the Old High Period on*.—Prerequisite, Course 5. Recitations on Stroebe und Whitney, *Geschichte der deutschen Literatur*, and Kluge, *Geschichte der deutschen National-Literatur*; reports and discussions on Scherer, *Geschichte der deutschen Literatur*, and Francke, *History of German Literature*; Anthologies: Collitz, *Selections from Early German Literature*, Kluge, *Auswahl deutscher Gedichte*, Sehrwald, *Deutsche Dichter und Denker, II*. From Lessing on, one or more works of the leading German authors will be read, and papers on the same presented and discussed in class. Conducted in German. Each half-year, 2 hours. Given in 1914-'15 and alternate years.

NOTE.—Any of the advanced courses may be taken by candidates for the Master's Degree, but in every case a greater amount of work will be required of such candidates than of undergraduate students.

FRENCH LANGUAGE AND LITERATURE.

MISS CAMPBELL AND MR. DUPERTUIS.

1. *Elementary Course*.—Fraser and Squair's *French Grammar*; Aldrich and Foster's *French Reader*; George Sand *la Mare au diable*; Labiche et Martin, *le Voyage de M. Perrichon*. Writing from dictation, and practice in speaking. Three divisions. Each half-year, 3 hours.

PROFESSOR HILLS AND MISS CAMPBELL.

2. *Intermediate Course*.—Syntax and prose composition; oral work based on texts read; and the reading of the following works: Alfred de Musset, *Pierre et Camille*; Anatole France, *le Livre de mon ami*; Maupassant, *Contes*; Moliere, *le Bourgeois gentilhomme*; Bowen's *French Lyrics*. Lectures. In this course French is the language of the class room. Two divisions. Each half-year, 3 hours.

For outside reading: About, *le Roi des montagnes*; Balzac, *Ursule Mirouet*, *le Père Goriot*, *Eugénie Grandet*; Dumas, *les*

Trois mousquetaires, la Tulipe noire; Erckmann-Chatrian, le Conscrit de 1813, Waterloo; Feuillet, le Roman d'un jeune homme pauvre; Gréville, Dosia; Victor Hugo, Notre Dame de Paris; Mæterlinck, la Vie des abeilles; Malot, Sans famille; Ohnet, le Maître de forge; George Sand, François le champi, les Maîtres sonneurs, Nanon; Souvestre, Un philosophe sous les toits; Verne, Tour du monde en 80 jours, Vingt mille lieues sous les mers; Vigny, Cinq-mars. Each student is expected to read two of these works out of class, and pass examination upon them. Other standard works, if approved by the instructor, may be read in the place of those given in the list.

MISS CAMPBELL AND MR. DUPERTUIS.

3. *Nineteenth Century Literature* (2 hours), and *Phonetics and Free Oral Composition* (1 hour).—The following works will be read in class: Victor Hugo, *Hernani, Poésies (extraits)*; Lamartine, *Méditations (extraits)*; Alfred de Musset, *On ne badine pas avec l'amour, Poésies (extraits)*; selected dramas and selections from prose fiction; Sainte-Beuve, *Selected Essays*; and parts of Lanson's *Histoire de la littérature française*. Lectures. Each half-year, 3 hours. Given in 1916-'17 and alternate years.

Outside Reading.—Each student is expected to read four of the following groups out of class, and pass examination upon them:

(1) Mme. de La Fayette, *la Princesse de Clèves*, and Saint-Pierre, *Paul et Virginie*; (2) Chateaubriand, *Attala* and *René*; (3) Lamartine, *Graziella*; (4) Victor Hugo, *les Misérables (extraits)*, or *Notre Dame de Paris*; (5) Balzac, *Ursule Mirouet*, or *Eugénie Grandet*; (6) George Sand, *François le champi* or *les Maîtres sonneurs*; (7) Anatole France, *le Crime de Sylvestre Bonnard*; (8) Pierre Loti, *le Pêcheur d'Islande*; (9) Mæterlinck, *les Aveugles, l'Intérieur*, and *l'Oiseau bleu*; (10) Rostand, *Cyrano de Bergerac*, or *Chantecler*.

4. *Classical French Literature* (2 hours), and *Advanced Prose Composition* (1 hour).—Prerequisites, Courses 1 and 2. The following works will be read in class: Warren's *French Prose of the XVII Century*; Corneille, *le Cid, Horace*; Racine, *Andromaque, Athalie*; Molière, *l'Avare, les Femmes savantes*; La Fontaine, *Fables*; Boileau, *l'art poétique*; and parts of Lanson's *Histoire de la littérature française*. Lectures. Each half-year, 3 hours. Given in 1915-'16 and alternate years.

Outside Reading.—Each student is expected to read several plays of Corneille, Racine, and Molière out of class, and pass examination upon them.

NOTE.—In Courses 3 and 4, French is the language of the class room.

PROFESSOR HILLS.

5. *Advanced Course in French Drama and Fiction*.—Prerequisites, Courses 1, 2, 3, 4, 9, and 10. The members of this class will meet individually with the instructor. To each student will be assigned the more important works and the biographies of three or more writers. Written reports will be required. Not less than 5,000 pages will be read. In addition to the 5,000 pages of French, the student must read some good history of France, and parts of works of literary criticism. The final examination will cover not only the works read, but also the student's ability to read French with ease and accuracy. Each half-year, 2 hours. Students desiring this course must consult the instructor.
9. *The Comedies of Molière*.—Each half-year, 2 hours. Given in 1915-'16 and alternate years.
10. *French Drama*.—From the beginning of the nineteenth century to the present day. Each half-year, 2 hours. Given in 1916-'17 and alternate years.
8. *Old French*.—Clédat's edition of the *Chanson de Roland*. Each half-year, 1 hour. Open only to Juniors, Seniors, and graduates, who have had Latin and French 1, 2, and 3 or 4. Given in 1915-'16 and alternate years.

NOTE.—Courses 9, 10 and 8 are conducted in French. Students who take any of these courses, or Course 5, are expected to have Lanson's *Histoire de la littérature française*, and an all-French dictionary (the *Littré-Beaujean* or the *Petit Larousse illustré*).

SPANISH LANGUAGE AND LITERATURE.

MISS CAMPBELL.

1. *Elementary Course*.—Hills and Ford's *Spanish Grammar*; Hills's *Spanish Tales for Beginners*; Alarcón, *El capitán Veneno*. Writing from dictation, and practice in speaking. Each half-year, 3 hours. Three divisions. Students may not elect Spanish 1 and Italian 1 in the same year.

PROFESSOR HILLS.

2. *Intermediate*.—Syntax and prose composition; oral work based on texts read; and the reading of the following works: Hills and Reinhardt's *Spanish Short Stories*; Moratín, *El sí de las niñas*; Hills and Morley's *Spanish Lyrics*. Lectures. In this course Spanish is the language of the class room. Each half-year, 3 hours.

For outside reading: Alarcón, *El escándalo*, *El niño de la bola*, *El sombrero de tres picos*; Blasco Ibáñez, *La barraca*; "Caballero," *La gaviota*, *La familia de Alvarada*; Isaacs, *María*; Palacio Valdés, *La aldea perdida*, *La alegría del capitán Ribot*; Pardo Bazán, *De mi tierra*, *Pascual López*; Pereda, *Don Gonzalo González*, *Pedro Sánchez*; Pérez Galdós, *Doña Perfecta*, *Marianela*, *Gloria* (2 vols.); Juan Valera, *Doña Luz*, *Pepita Jiménez*, *El comendador Mendoza*. Each student is expected to read two of these works out of class, and pass examination upon them. Other standard works, if approved by the instructor, may be read in the place of those given in this list.

4. *Advanced Course in Spanish Drama and Fiction*.—Prerequisites, Spanish 1, 2, 7 and 8. The members of this class will meet individually with the instructor. Not less than 4,000 pages will be read. In addition to the 4,000 pages of Spanish, the student must read some good history of Spain, and parts of works of literary criticism. Written reports will be required. The final examination will cover not only the works read, but also the student's ability to read Spanish with ease and accuracy. Each half-year, 2 hours. Students desiring this course must consult the instructor.
7. *Spanish Literature of the Nineteenth Century*.—Each half-year, 2 hours. Given in 1916-'17 and alternate years.
8. *Spanish Literature of the Siglo de Oro*.—Each half-year, 2 hours. Given in 1915-'16 and alternate years.
9. *Old Spanish*.—Menéndez Pidal's edition of the *Cantar del mío Cid*. Each half-year, 1 hour. Open only to Juniors, Seniors, and graduates, who have had Latin and French, and Spanish 1 and 2. Given in 1916-'17 and alternate years.

NOTE.—Courses 7, 8, and 9 are conducted in Spanish.

ITALIAN LANGUAGE AND LITERATURE.

PROFESSOR HILLS.

1. *Elementary Course*.—Marinoni's *Italian Grammar*; Bowen's *Italian Reader*; Goldoni, *Il vero amico* and *Un curioso accidente*. Each half-year, 2 hours. Given in 1915-'16 and alternate years. Students may not elect Italian 1 and Spanish 1 in the same year.
2. *Italian Literature*.—Dante's *Divine Comedy*. Lectures and collateral reading. Students are expected to have a copy of each of the following works: Grandgent's edition of the *Divina Commedia*; Gardner's *Dante* in *The Temple Primers* series; and Edgren's *Italian-English Dictionary*. Each half-year, 3 hours. Given in 1916-'17 and alternate years.

THE HISTORY OF ART.

ASSISTANT PROFESSOR SAHM.

- 1.**Ancient Art*.—A study of the architecture, sculpture, and painting of Egypt, Assyria, Persia, Greece, Etruria, and Rome. Special stress will be laid on Greek art and its perfect expression of Greek ideals. Recitations and lectures. First half-year, 2 hours.
2. *Mediaeval and Renaissance Art*.—Prerequisite, Course 1. Outline study of the Early Christian, Byzantine, Romanesque, and Gothic periods in Italy, France, and England. The most important work will be an appreciative study of the Renaissance in Italy. Recitations and lectures. Second half-year, 2 hours.
3. *The Art of Flanders and Holland*.—Prerequisite, Course 1. Flemish Painting from Van Eyck to Rubens and Van Dyck. The great Dutch painters of the 17th Century. Development of Portrait and Landscape Painting. Marine and Genre Painting. First half-year, 2 hours. Given in 1915-'16 and alternate years.
4. *The Art of Spain and France*.—Prerequisite, Course 1. Development of Spanish Painting under Italian and Flemish Influences. Velasquez and the Castilian School. Murillo and the Andalusian School. Survey of French Painting from the Early Renaissance through 17th Century Classic Art. Second half-year, 2 hours. Given in 1915-'16 and alternate years.
5. *German and English Art*.—Prerequisite, Course 1. The Great

*Open to Freshmen only by special permission.

German Painters of the 15th and 16th Century. The Portrait Artists of England in the 18th Century. Later English Art. The Pre-Raphaelite Brotherhood. First half-year, 2 hours. Given in 1916-'17 and alternate years.

6. *Movements in 19th Century Art*.—Prerequisite, Course 1. Summary and criticism of Modern Painting. Romanticism versus Classicism in French Art. The Barbizon School of Painters. Impressionism. Contemporary Painting in Germany and Holland. Brief Review of American Art. Second half-year, 2 hours. Given in 1916-'17 and alternate years.
7. *Art Seminar*.—Prerequisites, Course 1 and one other of the courses offered. Discussion of æsthetic problems. Detailed analysis of important movements in art. Study of European art centers. Conferences, reports, bibliography, 1 hour throughout the year.
8. *Architecture*.—A study of the development of historical styles with emphasis upon the structural and æsthetic principles upon which art form is based. Designed as a preparatory course for students who wish to take up the study professionally later on. 1 hour throughout the year.

HISTORY.

ASSISTANT PROFESSOR PARISH.

10. *General European History*.—From the Barbaric Invasions to the close of the Thirty Years War. Open to all students and advised as the preliminary course in history. Each half-year, 3 hours.
1. *Modern European History*.—From the close of the Thirty Years War to the present time. Open to those who have had History 10. Each half-year, 2 hours. Given in 1914-'15 and alternate years.
3. *English History*.—A survey of the political and social history of England from the earliest times to the present. Open to all students. Each half-year, 2 hours. Given in 1914-'15 and alternate years.
2. *American History*.—This course covers the entire period of American history and deals with the planting of the colonies and their struggle for independence, the struggle of the United States for nationality, and the development of the nation as a world power. Not open to Freshmen. Each half-year, 3 hours.

7. *Greek History*.—An outline of political history, with attention also to social, economic, intellectual, and military development, and the contribution of the Greeks to later civilization. First half-year, 2 hours. Given in 1915-'16 and alternate years.
8. *Roman History*.—Special emphasis will be laid on the history and culture of the late Republic and early Empire. Second half-year, 2 hours. Given in 1915-'16 and alternate years.
4. *The French Revolution and Napoleon Era*.—A study of the political, social, and economic causes of the Revolution, and of the events, institutions, and political philosophy of the period from 1789 to 1815. Open to those who have had History 10 or 3. First half-year, 2 hours. Given in 1915-'16 and alternate years.
5. *Europe since 1815*.—This course covers the development and inter-relation of the leading countries of Europe within the last hundred years, including a consideration of the race element and the balance of power in European affairs. Open to those who have had History 10 or 3. Second half-year, 2 hours. Given in 1915-'16 and alternate years.
13. *Constitutional History of England*.—A study of the development of the constitution of England, with considerable time given to the study of constitutional documents. Attention will also be paid to ideas and institutions influencing American political theory. Advised for those intending to study law. Open to those who have had History 3. Second half-year, 2 hours. Given in 1915-'16 and alternate years.
14. *British Colonial History*.—A study of the expansion of Great Britain and of her colonial policy with particular attention to her possessions in America. Open to those who have had History 3. Second half-year, 2 hours. Given in 1915-'16 and alternate years.
12. *History of the West*.—A study of the exploration of the North American continent and the westward growth of the United States. Open to those who have had History 2. Each half-year, 2 hours. Given in 1914-'15 and alternate years.
9. *Seminar Course in American or European History*.—Subject to be chosen at the beginning of the year. Open only to advanced students and required of those majoring in history. Each half-year, 1 hour.

POLITICAL SCIENCE.

MR. ELLINGWOOD.

1. *The Elements of Political Science*.—The nature, origin, and evolution of the State. The organization and operation of government. The purpose of the State. This course, or Economics 1, required of all Juniors. Freshmen not admitted. First half-year, 3 hours.
- 2.* *The History of Political Theories*.—Prerequisite, Political Science 1. The development of political thought from earliest times. First half-year, Plato to Hobbes; second half-year, Hobbes to Austin. Textbook, and readings in Plato, Aristotle, Hobbes, Locke, Montesquieu, Rousseau, Bentham, Austin, etc. Each half-year, 2 hours. Open only to Juniors and Seniors.
- 3.* *Comparative Government*.—Prerequisite, Political Science 1. A comparison of the constitutions and forms of government of the United States, England, Germany, France, and Switzerland. Textbook and lectures. Each half-year, 2 hours. Open only to Juniors and Seniors.
- 4.* *International Law*.—The general principles governing the intercourse of nations. Development of the idea of a *Ius Gentium*. Contributions of the United States to International Law. First half-year, the Law of Peace; second half-year, the Law of War. Each half-year, 3 hours. Open only to Juniors and Seniors.
- 5.* *The History of American Diplomacy*.—Prerequisite, History 2. A survey of our foreign relations from 1776 to the present time. The development of our foreign policy, with emphasis upon the Monroe Doctrine. A special study of the more important treaties. Textbook, lectures, and collateral reading. Each half-year, 3 hours.
- 6.† *American Government*.—Prerequisite, History 2. The origin, structure, and development of national, State, and local governments in the United States. One half-year, 3 hours.
- 7.† *English Government*.—Prerequisite, History 3. The nature, structure, and operation of English government as it is today. One half-year, 3 hours.

*Of Courses 2, 3, 4, and 5, not more than one will be given in any one year.

†Of Courses 6, 7, 8, and 9, not more than two will be given in any one year.

- 8.†*State Government*.—Prerequisite, History 2. The constitutional basis of the government of the States. The transition from territory to State. A special study will be made of the admission of Colorado, the formation and content of its constitution, and its development to date. One half-year, 3 hours.
- 9.†*American Political Theories*.—Prerequisite, History 2. The development of American political ideas from the Colonial period to the present time. Particular emphasis upon recent tendencies. Text-book and lectures. One half-year, 3 hours.

†Of courses 6, 7, 8, and 9, not more than two will be given in any one year.

ECONOMICS.‡

PROFESSOR PERSONS AND ASSISTANT PROFESSOR BLUM.

1. *Principles of Economics*.—This course, or Political Science 2, required of all Juniors. A general survey based upon the study and discussion of a text-book giving the currently accepted scientific analysis of industrial society, supplemented by lectures and assigned readings. The purpose of the course is to teach fundamental principles, to open the field of economics in the way most helpful to further more detailed study of special problems, and to give to those who intend to adopt business, law, or journalism, the general rules and principles contributed to business by the science of economics. Not open to Freshmen. First half-year, 3 hours.
21. *Commercial Development*.—The history of intersectional and international commerce. The organization of industry in Europe and the United States. Emphasis on the period 1750-1850. Economics 1 must precede or accompany this course. First half-year, 3 hours.
- 2.**Advanced Economic Theory*.—A study of the history of economic thought since the time of Adam Smith, with special reference to the economic conditions which influenced those theories. The latter part of the course will be devoted to an examination of modern theories of distribution. Second half-year, 3 hours. Given in 1915-'16 and alternate years.
- 17**Economic Problems*.—A course in current economic problems designed to supplement Economics 1 and to apply to the principles therein developed. This course must precede or accom-

‡See footnote, p. 65.

*Prerequisite, Economics 1.

pany all courses in Economics except Economics 1 and 21. The causes and effects of monopolistic consolidations; the policies of monopoly as they affect investors, laborers, and consumers; the progress of legislative control. Transportation problems; the railway as a public highway; government control; municipal utilities; methods of dealing with them. Labor problems; strikes; trade unions; collective bargaining; factory legislation, and child labor. Those economic problems will be especially emphasized which are questions of the day. Lectures, assigned readings, and discussions. Second half-year, 3 hours.

- 9.*†*Money and Banking*.—The history and theory of money, credit, and banking. The evolution of metallic currency; the position of the bimetallists and the quantity theorists; credit, credit instruments, paper money, convertible and inconvertible notes, modern currency problems, and foreign banking systems are studied with special reference to American currency and banking. Discussions of current topics and statistics relating to money, banking, domestic and foreign commerce and exchange, price movements, etc. Students will be expected to subscribe to a standard financial journal. Second half-year, 3 hours.
- 10.*†*Public Finance*.—A survey of the whole field of public finance, including (a) public revenues, their nature, classification and characteristics, with special emphasis on taxation; (b) public expenditures, their classification and relation to public welfare and to governmental functions; (c) the budget and its preparation in the great countries of the world; (d) public credit, its nature, employment, industrial effects, and administration. Second half-year, 2 hours. Given in 1914-'15 and alternate years.
- 18.*†*Statistics*.—The history, theory and methods of statistics. The making of schedules; the collection and tabulation of data; averages; graphic representation; frequency tables and curves; correlation; interpolation, etc. First half-year, 3 hours.
- 19.*†*Insurance*.—The theory of insurance; the development of insurance companies; the various systems of insurance; company management. The mathematics of compound interest, including annuities certain. The theory of probabilities as applied to the construction of mortality tables; the computa-

*Prerequisite, Economics 1.

†See Economics 17.

tion of reserve, surplus, premiums, endowments, dividends, etc., for life insurance. First half-year, 2 hours. Given in 1915-'16 and alternate years.

- 22.*†*Labor Problems*.—Present day labor problems connected with trade and industrial unions, wages, unemployment, efficiency, political action and theories, conciliation, and arbitration. The history of the labor movement during the period 1750 to date. Second half-year, 2 hours. Given in 1915-'16 and alternate years.
- 23.*†*Business Cycles*.—A study of the phenomena connected with business prosperity and depression, industrial crises and financial panics. The history of business cycles in the leading commercial countries. The various theories of crises and depressions. Effects of business cycles on investments, speculation, and business enterprise. Open only to Juniors and Seniors. Second half-year, 2 hours.

*Prerequisite, Economics 1.

†See Economics 17.

SOCIOLOGY.†

ASSISTANT PROFESSOR BLUM.

- 1.**Principles of Sociology*.—In this course an attempt is made to formulate the fundamental laws of association, with special reference to their relation to social progress. Such topics as the influence of the physical environment, natural selection, warfare, division of labor, sex and sexual selection, heredity, imitation, social oppositions, art, science and religion, will be discussed with reference to their effects on social progress. First half-year, 3 hours.
- 3.*†*Socialism*.—Proposals for the reorganization of society on a socialistic basis will be studied historically and critically. Writings of the early French and English socialists will be reviewed, but the major part of the course will be devoted to the study of German scientific socialism. Second half-year, 2 hours. Given in 1915-'16 and alternate years.
- 4.**Problems in Sociology*.—A study of particular social problems, including suicide, the liquor problem, divorce, immigration, poverty, crime, etc. Second half-year, 2 hours. Given in 1914-'15 and alternate years.

*Prerequisite, Economics 1.

†Prerequisite, Economics 17.

‡NOTE.—All of the courses listed above in Economics and Sociology, except Economics 1, count toward a major in Economics. Other courses, to count as part of the thirty hours required to make a major, must be approved by the professor under whom the major is taken.

BUSINESS ADMINISTRATION AND BANKING.†

PROFESSOR PERSONS, MR. ELLINGWOOD, MR. KLAHR, AND MR. VAN RIPER.

1. *The Theory and Practice of Accounting.*

(a) Double-entry drills, modern forms of accounting and practice in the use of essential books. Business forms, methods, and documents such as drafts, notes, and bills of lading.

(b) Partnership and corporation accounts, analysis of classified statements, manufacturing and trading accounts. Accounting procedure. Not open to Freshmen. Each half-year, 3 hours.

14. *Advanced Accounting.*—Amortization and depreciation accounts, annuities, cost accounting, auditing and advanced accounting procedure. Prerequisite, Business 1. Second half-year, 2 hours.

3. *Commerce and Industries.*—After a survey of the development and status of foreign industries, natural resources and the expansion of commerce, a special study is made of the principal articles which enter into American commerce. Resources, industries, and trade currents are treated. Second half-year, 3 hours.

4. *Corporation Finance and Industrial Organization.*—Historical development and analysis of the different forms of industrial organization, including the partnership, joint-stock company, and the corporation, and the later developments, such as the pool, trust, combination, and holding company. Critical discussion of the advantages and disadvantages of recent forms of business organization illustrated by documents. Elements of corporation finance, with special reference to organization and management. The evils of corporate organization, such as fraudulent promotion, over-capitalization, and manipulation. Public policy toward corporations, with special reference to taxation. Commerce clause of the Federal Constitution and its growing importance. A brief consideration of public-service corporations with special reference to municipal utilities. Prerequisites, Economics 1 and 17. Second half-year 3 hours.

5. *Commercial Law* (First year).—The first half-year will be given to the study of the general law of contracts. In the second half-year, a more detailed study will be made of Negotiable Instru-

†NOTE.—Of the courses listed above, only Business 4 and 7 will count toward a major in Economics.

ments, Sales, and Bailments. Open only to Juniors and Seniors. Each half-year, 3 hours.

13. *Commercial Law* (Second year).—First half-year: Carriers, Insurance, Guaranty and Suretyship, Agency. Second half-year: Partnership, Corporations, and an introduction to the law of property with emphasis upon the law of decedents' estates. Prerequisite, Business 5. Each half-year 2 hours.

6. *Business Organization and Management*.—An intensive study of the principles and mechanism of organization and management, with special emphasis on the following phases: the general institutions and forms of management; the determination and direction of operations; the plant, its site, construction and adaptation to the business; purchasing; the custody and treatment of stores and stock; the selection, care, and maintenance of tools and machinery; the selection, treatment, and payment of labor; selling and the organization and management of the sales force; credit and collections; advertising. Various types of business—retail, wholesale, and manufacturing—are considered, and a careful study is made of the principles of Scientific Management. Prerequisite, Business 1. First half-year, 3 hours; second half-year, 2 hours.

7. *Transportation*.—Steam Railways. (a) The railway problem of the United States, including theories of rates, combination and pooling, consolidation, community of ownership, and government ownership or control, involving a careful consideration of the work of the Interstate Commerce Commission and of State commissions. (b) A comparative study of the railway systems of other countries, especially England, Germany, France, Canada, and the Australian Commonwealth, with a consideration of the economic significance of the world's great railway systems.

Transportation and communication other than by steam railways. (a) Lake, river, and canal transportation in the United States and other countries. (b) Ocean transportation with special reference to its relation to the transportation systems of various countries. (c) Interurban railways and their growing competitive power, telegraphs, telephones, and cables. Prerequisites, Economics 1 and 17. First half-year, 2 hours.

9. *Banking Practice*.—Outline of the work of commercial, savings and financial banks and trust companies. The nature of investments

of the different institutions. The national reserve system and its functions. The nature of the demand for credit and currency. Investment banking. Prerequisite, Economics 9. First half-year, 3 hours.

10. *International Banking*.—The documents used in foreign exchange. Commercial and travelers' credits. Currency movements and their causes. Parity sheets and the method of computation of parities. Description of methods used by the international banking houses of New York, London, Berlin, and Paris. Prerequisite, Business 9. Second half-year, 2 hours.
12. *Mathematical Theory of Investments*.—A course covering progressions, limits and series, logarithms, graphic representation, interest, annuities, amortization, valuation of bonds, sinking funds and depreciation, theory of probability, life annuities and the elements of life insurance. Prerequisites, Mathematics 1. Second half-year, 3 hours.

MATHEMATICS.

PROFESSOR CAJORI, ASSISTANT PROFESSOR ALBRIGHT.

- 1.**Algebra*.—Graphs; Variation; the Binomial Theorem; Logarithms; Undetermined Coefficients; Permutations and Combinations; Theory of Limits; Series; Theory of Equations. First half-year, 3 hours.
- 2.**Solid and Spherical Geometry*.—Planes and Lines in Space; Polyhedra, the Cylinder, Cone and Sphere; Spherical Triangles. Second half-year, 2 hours.
- 3.**Plane Trigonometry*.—The functions of one and two angles; inverse functions; the solution of triangles; De Moivre's theorem; simple applications. Second half-year, 3 hours.

PROFESSOR CAJORI.

4. *Analytic Geometry (Elementary)*.—Plane loci of first and second order. Higher plane curves. First half-year, 3 hours.
5. *Analytic Geometry (More Advanced)*.—More thorough study of plane loci; solid analytic geometry. Second half-year, 2 hours.
6. *Calculus, Differential and Integral*.—First half-year, 3 hours. Second half-year, 4 hours.

*Courses 1, 2, and 3 required of Freshmen.

7. *History and Logic of Mathematics*.—This course is planned especially for those who are fitting themselves to be teachers of mathematics. One half-year, 2 hours.
- 8.**Projective Geometry*.—One half-year, 3 hours.
- 9.**Theory of Equations*.—One half-year, 3 hours.
- 10.**Differential Equations*.—2 hours.
- 11.**Determinants*.—One half-year, 2 hours.
- 13.**Vector Analysis*.—One half-year, 3 hours.

*Of Courses 8, 9, 10, 11, and 13, only two are usually given in any one year.

ASSISTANT PROFESSOR ALBRIGHT.

12. *Theoretical Mechanics*.—Prerequisite, Course 6. This course is intended especially for students of engineering and mathematical physics. Each half-year, 3 hours.

NOTE.—For a course in Elementary Surveying, see Civil 1, p. 81.

ASTRONOMY.

ASSISTANT PROFESSOR ALBRIGHT.

1. *General Astronomy*.—Introductory and descriptive. First half-year, 3 hours. Offered in 1915-'16 and alternate years.
2. *Elementary Meteorology*.—First half-year, 3 hours. Offered in 1914-'15 and alternate years.
3. *Constellations*.—Study of the stars; chart making. Lectures and night work. Once every two weeks throughout the year, credit one hour. Not given in 1915-'16.

NOTE.—For a course in *Field Astronomy*, see Civil 2, p. 81.

CHEMISTRY.

PROFESSOR STRIEBY.

2. *Advanced Chemistry*.—The lectures treat chiefly of Inorganic Chemistry, but half of the second semester is given to Organic Chemistry. Emphasis is placed on the principles of chemical science, the chemical laws and their methods of deduction, structural formulæ, chemical reactions and stoichiometry. The applications of chemistry to the arts, to sanitary science and to common uses, are made prominent. Abstracts from books or descriptions of observed processes are required in each semester.

The laboratory work affords a practical introduction to the qualitative analysis of common acids and bases, and also gives limited practice with balances and burettes in exact quantitative determinations by gravimetric methods and with standard solutions. Each half-year, 3 hours' recitation or lectures and 4 hours' laboratory work, credit 3 hours.

5. *Organic Chemistry*.—Prerequisite, Chemistry 2. Remsen's *Organic Chemistry*. Recitations, lectures and discussions of special subjects and processes. Each half-year, 3 hours' recitation and 4 hours' laboratory work, credit 3 hours.
6. *Theoretical Chemistry*.—Prerequisite, Chemistry 2. Text-book work with lectures and oral and written discussions. Each half-year, 3 hours.
7. *Medical Chemistry*.—Prerequisite, Chemistry 2. Lectures, text-book, assigned reading, and laboratory work. The study is mainly of substances, inorganic and organic, that are of importance, in medical science and hygiene. Special attention is devoted to the examination of carbohydrates, proteins, fats, blood, milk, urine, and digestive agents. The needful gravimetric determinations, considerable volumetric work with burettes and standard solutions, and microscopic and spectroscopic tests, supplement the usual qualitative examinations. Hawk's *Physiological Chemistry*. Each half-year, 4 hours' recitation, 8 hours' laboratory work, credit 4 hours.

MR. CLARK.

1. *Elementary Chemistry*.—Text-book work (chiefly Inorganic Chemistry) supplemented by lectures and discussions upon the fundamental laws, the application of chemistry to sanitary science, medicine, and some of the arts, and also by occasional papers from descriptions in technical books, and by reports of visits to metallurgical and manufacturing establishments. Remsen's *College Chemistry*. Each half-year, 3 hours' recitation and 4 hours' laboratory work, credit 3 hours.
3. *Qualitative Analysis*.—Prerequisite, Chemistry 2 or equivalent. Required of all majors in Chemistry and all Electrical Engineers. Experimental drill in obtaining characteristic reactions

*Courses 3 and 4a are shortened for Electrical Engineers only, so that each requires 5 hours of laboratory work per half-year. Credit, 3 hours.

of the more common elements, study of empirical formulæ and symbolic expression of reactions, solution of substances, separation of groups and elements, and analysis of simple salts and of complex mixtures and alloys. The laboratory work deals mainly with inorganic substances. The lectures, given two hours per week during the first quarter, take up the laboratory work in detail. First half-year, 8 hours laboratory, credit 4 hours.

4. *Quantitative Analysis*.—Comprises one full year's work. 4a begins in January, 4b in September.

(a) *Prerequisite, Chemistry 3. Required of all majors in Chemistry and Electrical Engineers. The laboratory work begins with the determination of single elements by approved Gravimetric and Volumetric methods. This is followed by the Proximate analysis of coal with its calorific power, limestone, boiler water and flue gas analysis. The lectures treat of the methods of analysis, properties of precipitates, stoichiometry, sampling, reporting, and the theory of solutions. One half-year, one or two hours recitation, 8 hours laboratory, credit 4 hours.

(b) Prerequisite, completion of 4a. The laboratory work and lectures are continuations of 4a, taking up the analysis of iron, copper, manganese, zinc and lead ores; a complete feldspar analysis; and determinations of sulphur and silicon in steel and pig iron. One half-year, one hour recitation and 12 hours laboratory, credit 5 hours.

8. *Agricultural Chemistry*.—Prerequisite, Chemistry 2. A study of soils, fertilizers, and foods; the analysis of soils, manures, water, and dairy products. Each half-year, 1 hour recitation, 5 hours laboratory, credit 3 hours.

9. *Assaying*.—Prerequisite, Chemistry 4a and 4b. Sampling and assaying of gold, silver, copper, and lead ores, mattes and bullions. Lectures and laboratory practice. Second half-year, three 4-hour laboratory periods and one recitation each week, credit 4 hours.

The fee for every course must be paid in advance. It covers the cost of gas, chemicals, and non-returnable supplies, except platinum.

*Courses 3 and 4a are shortened for Electrical Engineers only, so that each requires 5 hours of laboratory work per half-year. Credit, 3 hours.

Glassware and necessary apparatus (except platinum vessels) are loaned to the student and must be returned in good condition. The fees are as follows:

Course 1.....	\$7.00
Course 2.....	8.00
Course 3 or 4, each year's work.....	15.00
Course 5 or 7.....	15.00
Course 8.....	10.00
Course 9.....	20.00

No portion of the fee can be returned to any student who drops his course later than the first of December.

BIOLOGY.

PROFESSOR SCHNEIDER, MR. BAKER, MISS SMITH.

1. *General Biology*.—A general outline of the fundamental principles of Biology. Some topics considered are the origin of living matter, organization, growth and reproduction, differentiations, evolution.

(a) First half-year: *Plant Studies*.—In the laboratory a comparative study is made of the cryptogams, beginning with the simplest forms. This is followed by a study of the life history of the pine and a typical flowering plant.

(b) Second half-year: *Animal Studies*.—The laboratory work involves a study of representatives of the principal groups of animals.

Recitations or lectures, 3 hours; laboratory work 4 hours; credit 3 hours.

PROFESSOR SCHNEIDER, MISS SMITH.

2. *Plant Physiology*.—Prerequisites, Biology 1, and one year of Chemistry. A laboratory, recitation, and lecture course on the functions of the organs of seed plants. Emphasis is placed upon composition and nutrition of plants, and the vegetable enzymes. First half-year, 3 hours. Given in 1915-'16 and alternate years.
3. *Botany of the Seed Plants*.—Prerequisite, Biology 1. Adaptations, migration, distribution, and successions are considered at length. Opportunity is also given the student to become proficient in the determination of plant species among gymnosperms and angiosperms. Field excursions for the purpose of studying the local plant geography. Second half-year, recitations or lectures, 3 hours; field or laboratory work, 4 hours, credit 3 hours.

MISS SMITH.

4. *Plant Histology*.—Prerequisite, Biology 1. This course, in addition to a study of plant structure, affords experience in the technic of microscopic preparations. The paraffin method, the celloidin method, the freezing method, the glycerine method, and free-hand sectioning are applied. First half-year, credit 2 or 3 hours (3 hours in the laboratory counting as 1 hour).

PROFESSOR SCHNEIDER.

5. *Bacteriology*.—Prerequisite, Biology 1. Apparatus; culture media and methods of preparation; sterilization methods; microscopic characteristics of cultures of bacteria in general and of special forms, and methods of diagnosis; methods of obtaining pure cultures; methods of staining; bacteriological investigations of water, air, and soil. Students electing this course are expected to take Biology 6. Second half-year, credit 3 or 4 hours (3 hours in the laboratory counting as 1 hour). Given in 1914-'15 and alternate years. Open only to Juniors and Seniors.
6. *Sanitary Science and Public Health*.—A lecture course. Some of the topics discussed are: Death and its causes; classification of diseases; ancient and modern theories of disease; germ theory of infectious disease; direct causes and predisposing causes of disease; means of avoiding and resisting disease; vehicles of disease, such as dust, sewage, water, etc.; brief sketch of the important transmissible and epidemic diseases, prophylaxis, etc. Each half-year, 1 hour.
7. *Physiology and Personal Hygiene*.—Prerequisite, Biology 1. Lectures, recitations, and demonstrations dealing with the structure and activities of the human body. Emphasis is placed upon hygienic problems. Each half year, 3 hours.
8. *Experimental Physiology*.—Prerequisites, Biology 1 and 7, and one year of Chemistry. Students are advised to elect this course with Biology 7. The experimental work covers the following subjects: The physiology of ciliary motion; the general physiology of muscle and nerve tissue; phenomena of circulation, with countings of the blood-corpuscles and estimation of hæmoglobin; respiratory exchanges, movements, etc.; digestion and absorption; physiology of the spinal cord and brain; of the cutaneous sensations, taste, smell, hearing, and vision. Each half-year, 3 hours in the laboratory, credit 1 hour.

9. *Physiology*.—Prerequisites, Biology 1 and Chemistry 2. This course is adapted to the needs of the student planning to study medicine. Each half-year, recitations or lectures, 3 hours; laboratory work 5 hours, credit 4 hours.
18. *Evolution*.—Prerequisite, Biology 1. The history of the theory; the evidences for descent; the theories of species-forming, with a study of statistical and experimental evidence. First half-year, 3 hours. Given in 1914-'15 and alternate years. Open to Juniors and Seniors.
- MR. BAKER.
10. *Invertebrate Morphology*.—Prerequisite, Biology 1. A study is made of the advance in specialization from the Protozoa to the Arthropods. Types of the more important groups are studied in the laboratory. This course is especially recommended for those intending to teach Biology. First half-year, 6 hours, credit 3 hours.
15. *Comparative Anatomy of Vertebrates*.—Prerequisite, Biology 1. A comparative study of vertebrate structure. Dissections are made of the Amphioxus, Necturus, the shark's head, and a mammal. Second half-year, 6 hours, credit 3 hours.
11. *Histology*.—Prerequisite, Biology 1. A comparative detailed study of the tissues of the higher animals. Preparations of the principal tissues and organs are made and the common methods of preparation and mounting studied. Special microscopic drill is given in distinguishing the different tissues and organs. First half-year, 6 hours, credit 3 hours. Given in 1915-'16 and alternate years.
12. *Embryology and Cytology*.—Prerequisite, Biology 1. A study of maturation, fertilization and cleavage of the ovum, early stages of the embryology of the chick and pig. Special attention is given to the differentiation and development of tissues and organs. Students make most of their own preparations. Second half-year, 6 hours, credit 3 hours. Given in 1915-'16 and alternate years.
14. *History of Biology*.—Prerequisite, Biology 1. A study of the lives and work of the more important men who have shaped biological thought. Recitations, lectures, and assigned readings. Second half year, 2 hours. Given in 1914-'15 and alternate years.

16. *Animal Distribution*.—Prerequisite, Biology 1. Lectures, assigned readings, and laboratory and field study. An attempt will be made, during the early portion of the half-year, to study the different local forms, both in the field and in the laboratory, and to outline the fundamental principles of Animal Ecology. After cold weather begins, the time will be spent on Zoogeography, the distribution of animals throughout the world. First half-year, lectures two hours, laboratory or field work 3 hours, credit 4 hours. Given in 1914-'15 and alternate years.

LABORATORY FEES.

Course 1, 2, 10, 11, 12, or 15.....	\$3.00
Course 3 or 16.....	1.50
Course 4, for each hour of credit.....	2.00
Course 5 or 9.....	6.00
Course 8.....	4.00

PHYSICS.

ASSISTANT PROFESSOR TILESTON.

1. *Elementary Physics*.—A non-mathematical course intended to acquaint the student with the facts, the methods, and the general principles of physical science. This course is designed to meet the needs of the men and women who wish to be familiar with the philosophy of Physics. Each student is taught by continuous practice to give clear, concise descriptions and sketches of phenomena and mechanism met with in everyday life.

The lectures will be illustrated by lantern slides and by experiments of historical interest. Open to Freshmen. First half-year, 2 hours' lecture and one 4-hour laboratory period, credit 3 hours.

2. *Elementary Physics*.—This is a continuation of the preceding course. Prerequisite, Physics 1. Second half-year, credit 3 hours.
3. *General Physics*.—A study of the phenomena and laws of mechanics, wave motion, and heat. This course is designed to equip engineers, foresters, and medical students with a working knowledge of the basic principles of Physics. Instruction is given by lectures, recitations (Duff: *A Text Book of Physics*), frequent examinations, and daily problem work. In addition

to the lectures and laboratory a personal conference is frequently held with each student to assist in clearing up his difficulties. Prerequisites, Algebra and Plane Trigonometry. First half-year, 3 hours' lecture, credit 3 hours.

4. *General Physics*.—A continuation of Course 3, extended into the study of the laws of electricity, magnetism, sound, and light. Prerequisite, Physics 3. Second half-year, credit 3 hours.
5. *Experimental Physics*.—This course acquaints the student with the theory and use of instruments of precision, and enables him to verify and apply the physical laws learned in Course 3. First half-year, 6 hours, credit 2 hours. Courses 3 and 5 should be elected at the same time.
6. *Experimental Physics*.—The laboratory work of Physics 5 is continued, and the experiments concern the subjects of electricity and light. Second half-year, credit 2 hours. A briefer course with a credit of 1 hour is given for Civil Engineers.
7. *Teachers' Course*.—A course for students expecting to teach high school physics. The student will prepare detailed note books covering the entire problem, textbook, and laboratory work, of a typical course in high school physics. Special attention will be given to manipulation and construction of simple apparatus. An acquaintance with the leading text books in Physics and a study of pedagogical methods will form an essential part of the work. Prerequisites, Physics 1 and 2, or 3 and 4. Hours and credits will be arranged individually.
8. *Precision of Measurements*.—The theory and use of the slide-rule followed by a study of the nature and methods of elimination of errors in experimental work. This course is required of all students in Physics 6. Second half-year, credit 1 hour.
- 9 and 10. *Theory of Light*.—This course will consist of lectures, recitations, and laboratory work. The text used will be Wood's Physical Optics, supplemented by Preston and Edser. Prerequisites, Differential and Integral Calculus, and Physics 3, 4, 5, and 6. Throughout the year. Each half-year, lectures 3 hours, credit 3 hours.

PROFESSOR THOMAS.

- 11 and 12. *Elements of Electrical Engineering, and Alternating-Current Theory*.—Equivalent to Electrical Engineering 1 and 2.

13 and 14. *Advanced Electrical Laboratory, and Direct-Current Electrical Engineering Laboratory*.—Equivalent to Electrical Engineering 3 and 8.

MR. BLAKEY.

15 and 16. *Thermodynamics and Power Plants*.—Equivalent to Electrical Engineering 16 and 15.

NOTE.—A major in Physics may be obtained by combining credit in Mathematics with credit in Physics.

LABORATORY FEES.

Course 1 or 2	\$2.00
Course 5 or 6	3.00

GEOLOGY.

MR. SCARBOROUGH.

1. *General Geology*.—Prerequisite, Elementary Chemistry. Dynamical, Structural, and Historical Geology. Lectures, class discussions, laboratory work, and field excursions. The student, though not required to do so, is advised to elect Mineralogy (Geology 2) and Zoology (Biology 1b) before taking Geology 1, or at the same time with it. Text: Chamberlin and Salisbury's *College Geology*. Each half-year, 3 hours.
2. *Mineralogy*.—Prerequisite, Elementary Chemistry. Required for Course 6. The economic or ore classification of minerals is used, and the time is devoted largely to laboratory work in Descriptive and Determinative Mineralogy. Text: Moses and Parsons' *Mineralogy, Crystallography, and Blowpipe Analysis*. Laboratory fee, \$2.00. Uniform individual working outfits are furnished at cost. Each half-year, 3 hours.
3. *Economic Geology*.—Prerequisite, Course 1. Lectures, class discussions, and required reading. The geology and mineralogy of the ore deposits of the United States (gold, silver, copper, lead, zinc, iron). The greater part of the second half-year is devoted to the consideration of coal, building stones, and other important non-metallic minerals. In the spring there are voluntary field excursions to mining localities. Text: Ries's *Economic Geology of the United States*. Each half-year, 3 hours.
4. *Invertebrate Paleontology*.—Lectures, laboratory, and field work. Systematic study of the chief classes of the invertebrates by means of fossils, with special attention to the structure and develop-

ment of the trilobites and brachiopods. Collections are made in the field to afford training in the identification of geological horizons. First half-year, 3 hours. Given in 1914-'15 and alternate years.

5. *Vertebrate Paleontology*.—Lectures, laboratory work on the museum collections, and required reading on the main lines of mammalian descent from the Eocene to recent time. First half-year, 3 hours. Given in 1915-'16 and alternate years.
6. *Petrography*.—Prerequisite, Courses 1 and 2. Lectures and laboratory work with the microscope on the commoner rock-forming minerals and the principal rock types. Second half-year, 3 hours.
7. *Field Geology*.—The systematic investigation of the topography, stratigraphy, and paleontology of the Colorado Springs region, with the preparation of maps and a report. Each half-year. Credit in proportion to time given and results attained.

PHYSICAL EDUCATION.

For the first time since the founding of Colorado College, it has now become possible to add to the regular course of instruction a fully equipped Department of Physical Education for men. The gift of the Frederick H. Cossitt Memorial, presented by his daughter, Mrs. A. D. Juillard, has provided Colorado College with a building that is not only adapted to meet the needs of the men as a center for their social life, recreation, and athletics, but is also unique among such buildings at American colleges. Besides the elaborate athletic and training quarters,—a large in-door gymnasium, with boxing and wrestling rooms, locker rooms, rubbing rooms, shower baths, etc.—there is a stadium, adapted for out-door sports, dramatic exhibitions, college "sings," and other gatherings, a dining hall with suitable kitchens, an assembly hall, and a Common Room. The building is thus adapted to every need of the life of college men; and more than that, as the center for general college receptions, it increases the general social facilities.

(For a more detailed account, see the special Cossitt Memorial pamphlet.)

Requirements for Men.

DR. BLACKMAN, MR. ROTHGEB, MR. HICKOX, AND ASSISTANTS.

The required work in this Department extends over the first three years of the College course; during the Freshman year, 3 hours a week, credit 1 hour each half-year, and during the Sophomore and the

Junior years, 2 hours a week, credit 1 hour each half-year. Twice each year, just after registration in the fall and again near the end of the second half, every man in the Freshman, Sophomore, and Junior classes, and all others who enter competitive sports, are given both medical and physical examinations. In the medical examination, abnormalities of the body are noted, and conditions of external and internal organs ascertained, special care being given to heart and lungs. The medical examinations may be supplemented by special examinations at the desire of student or examiner. The physical examination consists of physical measurements and strength tests. Complete records of these are carefully kept in files accessible to students. Averages are computed for all the men, and individual comparisons made of these records both with one another and with those at other colleges. The individual student is thus enabled to see his own deficiencies, and is given advice regarding the best methods of upbuilding as his particular needs may dictate.

Students found physically or organically defective are required to do special work in medical gymnastics, assigned as the medical and physical examinations may show it to be desirable. This work supplements and in some cases replaces the regular class work. It is carried on in the special exercise room provided for it.

MR. HICKOX AND ASSISTANTS.

1. *Physical Education* (Elementary).—Required of all Freshmen. Elementary work in marching, calisthenics, gymnastic dancing, heavy apparatus, and games of the competitive type. A combination of the Swedish and the German systems, leading to correct carriage, muscular co-ordination, knowledge of gymnastic nomenclature and form, and an appreciation of the value of regular exercise. The aim is a regular increase in scope, proficiency, and effects through graded and correlated courses. Tests are given as may be desirable during each term. In the fall and spring, out-of-door games are substituted for the last third of each period. Each half-year, 3 hours, credit 1 hour.
2. *Physical Education* (Intermediate Course).—Required of all Sophomores. A continuation of Course 1, with wider scope, more varied methods, and greater emphasis on correctness and readiness of response. The exercises are more complex and require more highly developed muscular co-ordination. Introduction of light apparatus such as dumb bells and wands, more

difficult steps in dancing, and practice in leadership of squad work. The classes are divided into squads according to proficiency. Each half-year, 2 hours, credit 1 hour.

3. *Physical Education (Advanced Course)*.—Required of all Juniors. A continuation of Course 2, with a view to affording basis from which students may carry on the direction of physical work in secondary schools. Drills, methods, form, nomenclature, leadership, and execution are emphasized, and practice is given as leaders in Courses 1 and 2. Text Books used: *Manual of Marching*, Cornell and Berry; *Gymnastic Nomenclature*, Y. M. C. A. of N. A.; *Gymnastic Dancing*, Davidson; *Games*, Bancroft; excerpts from various texts through a reference bibliography. Each half-year, 2 hours, credit 1 hour.

MR. ROTHGEB, MR. HICKOX.

4. *Competitive Sports, Intramural and Intercollegiate*.—Elective for all students meeting college requirements. Members of squads and teams who are excused from Courses 1, 2, or 3 for competitive sports must attain satisfactory proficiency in the sport elected and be regularly at practice. This course includes intercollegiate, inter-class, inter-sectional, and campus league competition in all sports in season, viz.: football, soccer, field hockey, basketball, volley ball, indoor base ball, indoor hockey, wrestling, boxing, cross-country running, handball, tennis, baseball, track and field, and any other sport in which a sufficient number of students are interested to afford competition.

Requirements for Women.

DR. BLACKMAN, MISS DAVIS.

The required work for women in the Department of Physical Education covers the Freshman, Sophomore, and Junior years. Three hours' work each week, credit one hour, is required during the Freshman and Sophomore years, and two hours' work each week, credit one hour, during the Junior year. Medical and physical examinations are made on entrance and at the end of the second and third years, and records similar to those for the men are kept. Special exercise is prescribed for students showing defects of posture or physical inability to do the required amount of work. In the fall and spring, organized sports in the out-door gymnasium, managed by the Women's Athletic Association and under the direction of the instructor, takes

the place of the regular gymnastic work. From November 1st to May 1st one hour of dancing a week may be substituted for one hour of gymnastic work.

MISS DAVIS.

1. *Physical Education*.—Preliminary work for Freshmen, 3 hours a week. Gymnastics, simple apparatus, group games.
2. *Physical Education*.—Intermediate work for Sophomores, 3 hours a week. Gymnastics, apparatus, team games.
3. *Physical Education*.—Advanced work for Juniors, 2 hours a week. Gymnastics, heavy apparatus, team games.
4. *Physical Education*.—
 - (a) Preliminary ball room dancing, 1 hour a week.
 - (b) Advanced ball room dancing, 1 hour a week.
5. *Physical Education*.—
 - (a) Preliminary æsthetic dancing, 1 hour a week.
 - (b) Advanced æsthetic dancing, 1 hour a week.

NOTE.—Full bloomers of dark blue serge and white sailor blouses are required. Short full skirts are required for out-door work. Students should consult the instructor before procuring shoes.

CIVIL AND IRRIGATION ENGINEERING.

MR. OKEY, ASSISTANT PROFESSOR ALBRIGHT.

1. *Theory and Practice of Surveying*.—Mathematics 3 must precede or accompany this course. Construction, use, and adjustment of instruments; pacing, use of chain, compass, level, and transit; contouring and leveling by hand; cross-sections; azimuth traverse; balancing survey; computation of areas and volumes; mapping. First half-year, 2 hours. *Required of Civil Engineers and Foresters in the Freshman year.*
2. *Field Astronomy*.—Prerequisite, Civil Engineering 1, Civil Engineering 201. The practical application of astronomy to the problems of surveying. Determination of latitude, longitude, azimuth, and time by means of the sextant, engineer's transit, and chronometer. Second half, Sophomore year. Two recitations, three hours' field work, credit 3 hours. *Required of Civil Engineers.* Fee, \$2.00.
5. *Advanced Surveying*.—Continuation of Course 1. Topographic surveying; stadia measurements, plane table; hydrographic surveying; city surveying; geodetic surveying; mineral land

and mine surveying. Recitations, lectures, and assigned reading. The field work problems are assigned on the basis of the student's previous field experience. The following surveys and maps are required: Transit and stadia topography; plane table topography; repetition traverse; reservoir site; street grades; city subdivision; hydrographic survey; triangulation survey. Students seeking advanced credit in surveying must present notebook covering the work for which credit is sought. First half-year, 2 hours. *Required of Civil Engineers in the Junior year, and of Foresters in the Sophomore year.*

7. *Elementary Plane Surveying*.—A course in the use and adjustment of instruments for Electrical Engineers. The course is designed to give a general idea of surveying methods and the use of simple surveying instruments. It is necessarily elementary in character and restricted in scope. Second half, Junior year, three hours' field work, credit 1 hour. *Open only to Junior Electrical Engineers.* Fee \$2.00.

MR. OKEY AND ASSISTANTS.

20. *Railway Curves*.—Theory of simple, compound, and transition curves, vertical curves, frogs, switches, and crossings. Recitations, field work, lectures, and problems. First half, Junior year, 2 hours. *Required of Civil Engineers.*
21. *Railway Engineering*.—Reconnaissance; preliminary survey; maps and profiles; location; cross-sections; earthwork computations; mass diagram; yard layouts for freight and passenger use; construction of wooden trestles and masonry culverts; tunnels; track; ordinary and extraordinary methods of drainage; water supply, its quality, storage, and delivery; preservation of timber; block signals; general maintenance. The field work of this course involves the location and cross-sectioning of a short railroad line, together with the preparation of maps, profiles and estimates necessary to put it under construction. Second half, Junior year, 3 hours. *Required of Civil Engineers.*
22. *Railway Economics*.—Sources and value of train resistance; the relation of curvature and grades to velocity and maximum train load; effect of momentum; balance of grades for unequal traffic; analysis of operating expenses; cost of extra distance, curvature, rise and fall, and of additional trains; effect of roadbed on cost of running trains; pusher grades; value of additional traffic; improvement of old lines; standard plans; esti-

mates of cost. Lectures, recitations, problems, and design work. First half, Senior year, one recitation, three hours in drafting room, credit 2 hours. *Required of Civil Engineers.*

MR. OKEY, ASSISTANT PROFESSOR MOORE.

31. *Masonry*.—Cement, concrete, and masonry; stone and brick, requisites, tests, durability, classifications, and specifications; stone-cutting, quarrying, dressing and bedding; manufacture of brick; composition and manufacture of limes and cements; their requisites, tests, specifications, preservation and use; natural and Portland cements, sand, gravel, broken stone; proportions and quantities of concretes; economic proportions; concrete mixing and depositing; artificial stones; preservations; methods of quarrying; drilling, channeling, and wedging, use of explosives; classification and specifications of stone and brick masonry; measurements and cost; strength and durability; safe loads on masonry. Recitations, lectures, and notes. First half, Junior year, 2 hours. *Required of Civil and Irrigation Engineers.*
32. *Masonry Structures*.—Pressure and abutting power of earth; design and construction of retaining walls; stability of masonry structures, including towers and chimneys; theory and design of arches; theory and design of reservoir walls, earth and high masonry dams; applications of the theory of concrete-steel design. Recitations, lectures, and design work in the drafting room. First half, Senior year, 2 hours. *Required of Civil and Irrigation Engineers.*
33. *Foundations*.—Foundations of steel grillage and of concrete-steel for buildings; safe loads on masonry and foundation beds; examinations of foundation sites; pile driving and pile foundations; sheet-piling and coffer-dam methods; pneumatic foundations and caisson work; open dredging; bridge piers of masonry and steel; deep foundations; sub-aqueous tunneling. Recitations and design work. First half, Senior year, 2 hours. *Required of Civil and Irrigation Engineers.*

MR. OKEY AND ASSISTANTS.

41. *Hydraulics*.—Flow of water through orifices; time required for discharge of canal locks and similar volumes; weir discharge and gauging by weirs; gauging of water for irrigating systems; flow through the discharge of pipes; design of pipe systems; the Venturi meter; flow and discharge of open canals and

rivers; principles of impulse and of reaction water wheels. First half, 2 hours. Recitations and problem work. *Required of all Junior Engineers.*

42. *Hydraulic Laboratory*.—Application in the laboratory of the principles and theory studied in Course 41. First half, Junior year, laboratory 3 hours, credit 1 hour. Open to those who have registered in Course 41. *Required of Junior Civil Engineers.* Fee, \$3.00.

43. *Hydraulic Engineering*.—Continuation of Course 41. Collection and storage of water; analysis of hydrographic data with particular reference to Colorado and other Western states; hydraulic motors; design of hydro-electric power plants. Recitations, lectures, design work, and assigned reading. Credit 2 hours. *Required of Senior Irrigation and Electrical Engineers.*

MR. OKEY.

51. *Irrigation Engineering*.—Irrigation of land; amounts and periods of application; grades, cross-section, and capacity of canals; surveys for irrigation works; source of water supply; hydrographic data; Colorado streams; return of seepage waters; irrigation by pumping. Lectures, recitations, design work, and assigned reading. Second half, Senior year, 3 hours. *Required of Senior Civil Engineers and of Junior Irrigation Engineers.*
61. *Water Supply*.—Rainfall and storage; flow of streams; influence of soils, elevation and geologic characteristics of water-shed; methods of supply; underground flow; reservoir construction; distributing systems; house-supply and wastage; water purification; sand filters, design and construction of water supply system for typical town; maintenance, and office records. Recitations, lectures, collateral reading, and design work. First half, Senior year, 3 hours. *Required of Civil and Irrigation Engineers.*
62. *Sanitary Engineering*.—Treatment and disposal of sewage and refuse by sedimentation, precipitation, and use of septic tanks; treatment of effluent by continuous and intermittent sand filtration; fertilization; disposal of sludge; sewage and surface drainage of cities and towns; separate and combined systems of sewers; capacity of mains and branches; catch-basins, manholes; flush-tanks; outfalls; grades and sections; flow and discharge

of sewers; construction. Lectures, recitations, and assigned readings. Second half, Senior year, 2 hours. *Required of Civil and Irrigation Engineers.*

71. *Roads, Pavements and Parks.*—Surveys and locations; drainage and grades; foundations; selection and treatment of materials; maintenance of roads and pavements; design, construction, and maintenance of parks and parkways. Lectures, recitations, and assigned readings. Second half, Senior year, 2 hours. *Required of Civil Engineers.*

MR. OKEY AND ASSISTANTS.

81. *Resistance of Materials.*—Laws of elasticity in homogeneous materials; coefficients of elasticity; relations between stresses and strains; common theory of torsion and flexure; elastic limits, working stresses and ultimate resistance of wrought iron, cast iron, steel, alloys, timber, simple and continuous beams; design and construction of iron, steel, and timber columns and beams; shafts; cables; specifications. First half-year, 3 hours; second half-year, 2 hours. *Required of all Junior Engineers.*
82. *Testing Laboratory.*—Tests of the materials of construction, including steel, wrought iron, cast iron, brick, stone, cement, concrete, and timber. Each student is required to make individual tests and reports. Second half-year, one 3-hour laboratory period per week, credit 1 hour. *Required of all Junior Engineers.* Fee, \$4.00.
83. *Stresses.*—The truss element; simple non-continuous trusses with parallel chords; fixed and moving loads; through and deck spans; position of any system of concentrated moving loads for greatest chord and web stresses; combination of analytical and graphic methods; application to bridge and roof trusses; arched ribs. Two recitations, three hours in drafting room, with problems; lectures. Second half, Junior year, credit 3 hours. *Required of Civil Engineers.*
84. *Bridge Design.*—Railway and highway bridges; pin and riveted connections; the design of details for bridges, roofs and buildings; floors for buildings and railway and highway bridges; wind loads and stresses; complete designs and detail drawings of a roof truss, a deck plate girder, a riveted pony highway truss, and a through pin connected railway truss. Lectures on modern shop and drafting room practice. First half-year,

two recitations and three hours in the drafting room; second half-year, two recitations and six hours in the drafting room. Throughout the Senior year. Credit, first half-year, 3 hours; second half-year, 4 hours. *Required of Civil Engineers.*

Field Courses in Surveying

At Manitou Park, Four Weeks During June and July.

MR. OKEY AND ASSISTANTS.

201. *Field Practice in Plane Surveying.*—Prerequisite, Civil 1, Graphics 1. Four weeks in Manitou Park, between the Freshman and the Sophomore years. Credit 4 hours. *Required of Civil and Irrigation Engineers, and Foresters.* Fee, \$10.00.
211. *Field Practice in Advanced Surveying.*—Prerequisite, Civil 5. Forester's Course. Credit 4 hours. Four weeks in Manitou Park. *Required of Foresters.* Fee, \$10.00.
221. *Railway Field Work.*—Prerequisite, Civil 21. Two weeks in Manitou Park, between the Junior and the Senior years. Credit 2 hours. *Required of Civil Engineers.*
241. *Field Practice in Hydrographic and Mineral Land Surveying.*—Two weeks in Manitou Park, between the Junior and the Senior years. Credit 2 hours. *Required of Civil Engineers.* Fee for Courses 221 and 241 together is \$10.00.
251. *Field Practice in Irrigation Surveying.*—Prerequisite, Civil 5. Four weeks in Manitou Park, between Junior and Senior years. Credit 4 hours. *Required of Irrigation Engineers.* Fee, \$10.00.

ELECTRICAL ENGINEERING.*

PROFESSOR THOMAS.

1. *Elements of Electrical Engineering.*—A theoretical course covering the fundamental principles of direct currents and their application in direct current machinery. The text used is Franklin & Esty's *Elements of Electrical Engineering*, Volume I, and is supplemented by lectures and assigned work in Lyon's *Problems in Electrical Engineering*. Equivalent to Physics 11. *Required of Electrical Engineers.* First half, Junior year, credit 4 hours.
2. *Alternating-Current Theory.*—A continuation of Electrical 1, taking up alternating current theory and application in alternating current circuits. Texts: Jackson's *"Alternating Currents and*

*Laboratory Fees: See footnote, p. 89.

- Alternating Current Machinery,"* Chapters I to IX inclusive, and Lyon's *Problems in Electrical Engineering*. The text book work is supplemented by lectures. Prerequisite, Electrical Engineering 1. Equivalent to Physics 12. Required of Electrical Engineers. Second half, Junior year, credit 3 hours.
3. *Advanced Electrical Laboratory*.—Magnetic measurements, the measurement of conductivity and insulation resistance, the calibration of direct-current instruments and tests such as the location of faults in telephone circuits, etc. Equivalent to Physics 13 (p. 77). First half, Junior year, two 3-hour periods, credit 2 hours.
 4. *Alternating-Current Measurements*.—The calibration of commercial alternating-current instruments for the measurement of current, electromotive force, and power. Also studies of the instrument transformer, phase and frequency meters, and of inductance, effective resistance, and resonance. The measurement of power and the phase relations of polyphase circuits. First half, Senior year, one 3-hour period, credit 1 hour. Prerequisite, Electrical Engineering 2.
 5. *Alternating-Current Machinery*.—A lecture course on alternating current machinery, including generators, motors, converters, and transformers. The lectures are supplemented with problem work and assigned reading in Jackson's "*Alternating Currents and Alternating Current Machinery*," McAllister, Karapetoff, Steinmetz, and the technical press. Required of Senior Electrical Engineers. Throughout the Senior year. 3 hours each half-year. Prerequisite, Electrical Engineering 1 and 2.
 6. *Electrical Measuring Instruments*.—A course of study in the theory of various direct-current measuring instruments, including those used in Electrical 3. Text: *Electrical Meterman's Handbook*, published by the National Electric Light Association. The text is supplemented by lectures. Second half, Junior year, 1 hour.
 7. *Alternating-Current Instruments*.—The theory of various types of alternating-current measuring instruments, including the instruments used in Electrical 4. A continuation of Electrical 6, using the same text. First half, Senior year, 1 hour.
 8. *Direct-Current Electrical Engineering Laboratory*.—The work of this course includes the ordinary tests of direct-current machinery, such as efficiency by brake for motors, by loading for gen-

erators, and by the stray-power method, heat runs, regulation and parallel running, and the analysis of losses. Each student presents a carefully prepared preliminary report covering the theory of the experiment and the method of procedure, which is corrected and must be approved before the experiment may be performed. Each student also presents a final report which in addition to the working up of the experiment includes an analytical discussion of the experiment and its results. Equivalent to Physics 14. Second half, Junior year, one afternoon for preliminary reports and one 3-hour laboratory period, credit 3 hours. Prerequisite, Electrical Engineering 1.

9. *Electrical Distribution*.—A lecture course dealing with commercial and technical features of the generation, distribution, and consumption of electrical energy. A portion of the work is covered by text-book assignments to Chapters VII. to X. of Vol. I and Chapters XV. and XVI. of Vol. II of Franklin and Esty. First half, Senior year, 2 hours. Prerequisite, Electrical Engineering 1 and 2.
10. *Electrical Engineering*.—A lecture course dealing with some of the problems and systems of long-distance, high-tension transmission and electric traction. This lecture course is supplemented with problems. In the last part of the term, Steinmetz's *Transient Electric Phenomena* is used as a text. Prerequisite, Electrical Engineering 9. Second half, Senior year, 2 hours.
11. *Alternating-Current Electrical Engineering Laboratory*.—The work of this course includes such tests as regulation from open and short-circuit characteristics, regulation and efficiency by loading, efficiency by the retardation method of analyzing losses, and the parallel operation of alternators; synchronous motor tests, induction motor tests, and tests of the losses and regulation of transformers, both by loading and by "loading back." Throughout the Senior year. One afternoon for preliminary reports, and one 3-hour laboratory period, each half-year, credit 3 hours. Electrical Engineering 5 must precede or accompany this course.
12. *Dynamo Design*.—A lecture and class room course, considering the materials of construction, armature windings, and the principles of calculation in the design of direct-current machines and transformers. Text: Gray's *Electrical Machine Design*. First half, Senior year, 1 hour. Prerequisite, Electrical Engineering 1 and 2.

13. *Electrical References*.—A course of reference work in connection with the important articles in the current technical and scientific periodicals. Assigned readings and abstracts. Throughout the Senior year. Each half-year, 1 hour.
14. *Electrical Engineering for Civil and Mining Engineers*.—This course, required of all engineers except Electrical Engineers, is given throughout the Senior year. It covers the principles of both direct and alternating currents and their application in machines and transmission. Texts: Franklin & Esty's *Elements of Electrical Engineering*, Vol. I, and Jackson's *Alternating Currents and Alternating-Current Machinery*. Each half-year, 3 hours.

MECHANICAL ENGINEERING COURSES OFFERED BY THE ELECTRICAL ENGINEERING DEPARTMENT.

MR. BLAKEY.

15. *Power Plants*.—A study of steam boilers, reciprocating engines and their valve gears, and turbines. The construction, operation, and testing of the machines and their auxiliaries, and the conditions affecting their economical use are considered in detail. Lectures, problems, and assignments in Hutton's *Mechanical Engineering of Power Plants*. Required of all Engineers. Second half, Junior year, 2 hours.
16. *Thermodynamics*.—A study of the principles and concepts of thermodynamics which are essential to the study of the construction and operation of the steam engine, steam turbine, air compressor, gas engine, and their auxiliaries. Required of all Engineers. First half, Junior year, 2 hours.

PROFESSOR THOMAS.

17. *Engineering Inspections*.—An excursion course designed to acquaint the student with modern practice in electrical and mechanical engineering by visiting power and manufacturing plants. Four or five days are spent each year on one of these trips. One trip is to Denver and vicinity and the alternate trip includes Pueblo, Cañon City, and the Cripple Creek District. A written report on each trip is required. Required of Junior and Senior Electrical Engineers. Credit 1 hour for both trips.

Laboratory Fees per half-year: Electrical Engineering 4, \$3.00; Electrical Engineering 3, \$4.00; Electrical Engineering 8 and 11, \$5.00.

GRAPHICS.

ASSISTANT PROFESSOR MOORE.

In the Freshman and Sophomore years, students are expected to devote more time to drawing than the number of hours assigned in the statements given below, but may do the extra work at such hours as suit their convenience.

Students in all engineering courses are expected to provide themselves with a good and complete set of drawing instruments—design and make to be approved by the instructor.

1. *Elements of Drawing*.—This course includes elementary exercises to develop facility in the use of the instruments, selected geometrical problems, cross-sections, shading with the right line and the bow pen, conventional representations, mathematical curves, cycloidal, and other motion curves, isometric, oblique and orthographic projections, working drawings, tracings, the form and proportions of standard letters, both free-hand and ruled, methods of spacing and laying out titles. First half, Freshman year, 6 hours, credit 2 hours. *Required of all Engineers.*
2. *Descriptive Geometry*.—The work consists of recitations from text-books and the graphic solution of problems. After the necessary elementary problems, special attention is given to the practical side of this subject, in its relation to stereotomy, pattern-making, sheet metal work, architecture, mine surveying, and machine drawing. First half, Freshman year, 1 hour; second half, Freshman year, 8 hours, credit 5 hours. *Required of all Engineers.*
3. *Machine Design*.—Includes recitations from text-books, the copying and tracing of machine drawings, drawing to scale from models and machine parts, working, detail, and assembly drawings, laying out tooth-wheel gearings, and the making of original working drawings from specifications. First half, Sophomore year, 4 hours, credit 2 hours. *Required of all Engineers.*
4. *Graphic Statics*.—This course includes the study of forces, stresses, couples and moments of inertia, and is introductory to the later course on Theory of Trusses. Recitations from text-books are followed by the application of the principles in the solution of practical problems in roof trusses, involving permanent and temporary loads, snow loads, and wind pressures. Second half, Sophomore year; first half-term, 2 hours per week; second half-term, 4 hours per week, credit 2 hours. *Required of Civil Engineers.*

5. *Theory of Mechanism*.—The course consists of text-book recitations on theoretical mechanism, motion and interaction of machine parts, mathematical problems in machine design, tooth gearing, link motions, etc., with drawing of plates illustrating the practical application of the problems. Second half, Sophomore year; first half-term, 2 hours; second half-term, 4 hours, credit 2 hours. *Required of Electrical Engineers.*
6. *Forester's Course in Elements of Drawing*.—This course consists of exercises selected from the Engineers' Course, Graphics 1. It is intended to prepare and fit the Forestry students for the work of making and lettering maps. This course is a prerequisite for Civil 1, Civil 201, and Forest Mensuration. First half, Freshman year, 2 hours, credit 1 hour. *Required of all Forestry Students.*

SHOP WORK.

MR. BLAKEY.

In the shops it is aimed to give students some knowledge of carpentry, wood-turning, pattern-making, blacksmithing, machinists' bench and vise work, and machine tool work. In connection with the shopwork a course of reading is mapped out covering the construction, care, and use of the tools and machinery with which the student is working. Practical talks and lectures are also given.

1. *Wood Working and Pattern Making*.—Students acquire a practical knowledge of the handling of tools and keeping them in order. The fundamentals of joinery and wood turning are worked out in a series of graded exercises. One third of the time is devoted to elementary pattern making.
2. *Pattern Making*.—Patterns for cores, valves, pulleys, sheaves, gear wheels, rack and pinions and other parts of machines are made. First half of second semester of Freshman year, 2 three-hour periods, credit 1 hour. *Required of Electrical Engineers.* Prerequisite Shop 1.
3. *Forging*.—Students acquire a practical knowledge of the handling and working of iron and mild steel; of the operations of bending, forming, upsetting, punching, splitting, welding, tempering and tool-making. Second half of second semester Freshman year, 2 three-hour periods, credit 1 hour. *Required of Electrical Engineers.* Second half, Sophomore year, 1 three-hour period, credit 1 hour. *Required of Civil Engineers.*

4. *Machine Work*.—The student does general bench and floor work including chipping, filing, scraping, threading and tapping, and brazing. During the latter part of the course work is done involving some of the more simple operations on the machines. Second half, Sophomore year, 1 three-hour period, credit 1 hour. *Required of Electrical Engineers.*
5. *Advanced Machine Work*.—Operations are performed with the various machines as follows:
- (a) With the lathe: turning, boring, thread-cutting, tapering, eccentric turning, etc.
 - (b) With the milling machine: surfacing, slotting, fluting, gear-cutting, spiral grooving, etc.
 - (c) With the shaper: surfacing, slotting, etc.
 - (d) With the drill press: drilling, reaming, etc.
 - (e) With the universal grinder: grinding surfaces, cylinders, milling cutters, reamers and various other tools.

Second half, Junior year, 1 three-hour period, credit 1 hour.
Required of Electrical Engineers. Prerequisite, Shop 4.

FEES.

Shop 1, 4, and 5	\$4.00 each
Shop 2 and 3	2.00 "

FORESTRY.

PROFESSOR TERRY.

1. *Forest Mensuration*.—The use and construction of log rules, the determination of the contents of logs in board, cubic, and cord measure; the contents of standing trees and exact methods of determining the contents of whole stands. The construction and use of volume and yield tables; the increment in diameter, height, and volume of single trees and whole stands; the determination of the age of single trees and stands. Lectures, 5 hours and field work. First half of the fall term. Text-book: Graves' *Forest Mensuration*.
2. *Forest Surveying and Timber Estimating*.—Methods of making forest maps showing types and topography. Plane table and traverse board methods, measuring distances by stadia, chain, or pacing. Use of aneroid barometer, hand level and clinometer. Different methods of estimating timber. After a number of small areas in the Manitou Forest have been esti-

mated by intensive methods, camping trips are made to different parts of the Pike National Forest and large tracts of timber are estimated and mapped. Forest Service reconnaissance methods are compared with other methods of timber cruising. Last half of the fall term. Graves' *Mensuration*; Cary's *Handbook for Northern Woodsmen*, and *The Woodsman's Handbook*, published by the Forest Service, are used for text and reference.

3. *Dendrology*.—Monographic study of the important forest trees of the United States; their classification, identification, distribution and silvical characteristics. During the fall, field trips will be taken to familiarize the students with the forest flora in the Manitou Forest and surrounding region. The distribution of forest types in this part of the Rocky Mountains and the requirements of the species composing these types will be studied in their natural habitat. Lectures or recitations 5 hours, 6 hours of laboratory during the winter term.
4. *Wood Technology*.—The structural, mechanical, physical and chemical properties of wood, including timber-testing on Olsen and Riehlé machines. The identification of the more important commercial woods. Both microscopic and gross structure are studied. Methods of wood-preservation. Lectures 2 hours and laboratory 4 hours during the winter term.
5. *Silviculture*.—The physical foundations of silviculture—influence of temperature, light, moisture, soils, and other site factors on forest growth. The principal silvicultural systems, both of natural and of artificial regeneration, and the adaptability of these systems to American conditions. Thinnings and improvement cuttings. Methods of artificial forestation; direct seeding, planting, and the management of forest nurseries; lectures 3 hours and assigned readings during the winter term.
6. *Forest Protection*.
 - (a) *General Protection*.—Protection from fire, animals, and adverse climatic influences.
 - (b) *Forest Entomology*.—A study of the life histories and habits of insects injurious to forest trees and products. Identification and methods of control.
 - (c) *Diseases of Trees*.—Injuries to trees caused by parasitic fungi; also the causes and effects of wounds and the treatment of such injuries. The course includes a considera-

tion of normal and pathological physiology. Field investigations of specific cases of injury by insects, fungi, and other agencies. During the fall and spring terms; lectures or recitations, 2 hours, and assigned readings during the winter term.

7. *Silvicultural Operations*.—During the spring term the students will receive practice in making thinnings and improvement cuttings, and in conducting other silvical investigations in the Manitou Forest. Experiments in different methods of direct sowing and planting will be carried on. Each student will prepare a planting plan for a portion of the Manitou Forest. Three or four weeks of the spring term will be spent in nursery work at the Forest Service Nursery at Monument, Colorado, under the direction of the Nursery Manager. (Monument is a half-hour's ride by rail from Colorado Springs.)
8. *Forest Improvement Work*.—The location and construction of forest roads, trails, bridges, telephone lines, fire lines, lookout stations, ranger stations, and other permanent improvement work on the National Forests, will be studied by lectures, assigned readings and inspection. Lectures, 2 hours during the fall term.
9. *Forest Management*.—The valuation of forest land, methods of regulating the yield, and the preparation and execution of working-plans for the management of forest property. The students will make a practical working-plan for a portion of the Manitou Forest, and from year to year each class will also help to execute the provisions of the general working-plan for the whole Forest. Lectures, field and office work daily during the fall term.
10. *Forest Utilization*.—The development of the lumber industry in the United States. Methods and costs of lumbering, milling, and marketing in the different forest regions. Minor forest products. Lectures or recitations 5 hours a week, and assigned reading during the winter term.
11. *Forest Geography*.—The forest regions of the United States; detailed descriptions of the more important forest types and of commercial tree species; methods of silviculture and management; the National Forests; a few lectures on the forests of Canada, Alaska, the Hawaiian and Philippine Islands, and Mexico. The physiography of the United States will be con-

sidered in connection with the forest regions. The meteorology and the climatology of the United States will be treated in a general way, especially in their relation to forest growth and distribution. This course will also provide a comprehensive review of the courses in Dendrology and Silviculture, which will be of value to students preparing for the civil service examination. Lectures or recitations 5 hours a week, and assigned readings during the winter term.

12. *Forest Policy*.—History of the development of forest policies and administrative methods under the influence of economic and political conditions; forest legislation and administration of selected foreign countries; federal and state forest laws; the organization of the Forest Service and its administration of the National Forests. Forest taxation. Fernow's *History of Forestry* and *Economics of Forestry* are used for reference. Lectures or recitations 3 hours, and assigned readings during the winter term.
13. *Lumbering Operations*.—The Senior class will spend the spring term on some timber tract or tracts where extensive logging and saw-milling operations are in progress. They will study these methods in detail, considering the costs of the various operations, business organization and methods, efficiency of labor and of equipment. They will also estimate the timber and make a logging plan for the tract. The work will round out and also comprise a resumé of the courses in Forest Surveying and Estimating, Forest Management and Forest Utilization.

COURSES FOR TEACHERS.

Courses will be arranged, on application, for teachers of the city at hours convenient for them, either late in the afternoon or on Saturday mornings. Such courses, if passed successfully, will be credited as college work.

MUSIC.

For courses in Music, including those counted toward a College Degree, see pp. 96-101.

Department of Music

FACULTY.

WILLIAM FREDERICK SLOCUM, D.D., LL.D. 24 College Place
President.

EDWARD DANFORTH HALE, A.M. 1424 N. Nevada Ave.
Dean of the Department of Music and Professor of the Theory and Literature of Music, and the Pianoforte.

A.B. (Williams College) '80; A.M. (*ibid.*) '83; Professor at the New England Conservatory, '85-'04; Colorado College, '05.

MRS. GEORGE MAXWELL HOWE. 1811 N. Nevada Ave.
Instructor in Violin.

Cincinnati Conservatory of Music, '01-'03; Stanton College, Natchez, Miss., '03-'05; Sternsches Konservatorium, Berlin, '05-'06; Woman's College, Columbia, S. C., '06-'07; Colorado College, '10.

HENRY HOWARD BROWN. 1716 Wood Ave.
Instructor in Voice Culture.

Pupil of E. W. Glover, Assistant Director Cincinnati May Festivals, '00; J. A. Broeckhaven, '00-'01; James Sauvage, '01; Dora Topping, '02-'04; Max Spicker, '03-'06; Amherst Webber (coach of MM. de Reszke, Mmes. Nordica, Eames, and others) '05; Colorado College, '14.

LOTA BLANCHE MERRIS. 1815 N. Nevada Ave.
Instructor in Voice Culture and Public School Music.

Colorado College and School of Music, '07-'09; Oberlin Conservatory, '12-'13; pupil of Oscar Saenger and W. J. Falk, '10; H. Howard Brown, '10-'14; Colorado College, '14.

ADMISSION.

To preparatory courses and to all special studies students are admitted without examination. *Pianoforte* PREPARATORY is a requirement for admission to *Pianoforte* (a).

COURSES OF STUDY.

1. *General Musical Culture*.—Outlines of Musical Notation, Nomenclature and Acoustics; Musical Structure, Formal, Harmonic, and Contrapuntal; the Symphony, the Orchestra, and the Orchestral Score; the Masterpieces of Oratorio, Opera, Concerto, and other large forms; Musical History, Biography, and Criticism. This course is designed to appeal to all classes of students;

in particular, through both concrete and imaginative treatment of the subject, to those who, for various reasons, cannot acquire the musical technique, but would be glad to give music a place in their culture scheme, to qualify themselves for intelligent criticism and appreciation of the art. One year, 4 hours. Tuition, \$10.00 each half-year. Free to music students.

2. *Pianoforte*: PREPARATORY.—A course normally occupying three years, designed to qualify for admission to the Collegiate course. It may be pursued here or under accredited teachers. At the end of it the student is expected to show satisfactory knowledge of musical notation and elementary nomenclature; of all scales and arpeggios, with the ability to execute them at a moderate tempo; and of the following literature or its full equivalent, including the musicianly performance by heart of a representative program chosen from it.

Bach: The Magdalena Bach Clavecin Book.

Haydn: *Sonatas*, G Major, 2-4, D major, 4-4 (moderato).

Mozart: The easiest sonatas in C major and F major.

Mendelssohn: *Kinderstuecke*, Op. 72 and the easiest numbers of *Songs Without Words*.

Schumann: The *Jugendalbum*.

Pianoforte: COLLEGIATE.

- (a) Structural, memory, technical, critical and interpretative study of a satisfactory group of works by the classical, romantic, and modern composers. The presentation of a typical program made up from this group, containing compositions by Bach, Haydn or Mozart, Mendelssohn or Schumann. (Typical pieces, first year, Mozart, *G major Sonata*, Mendelssohn, *Song Without Words*, No. 45). Sight-reading. Forming and maintenance of a répertoire; study of Hale, Gow, Cutter, Goetschius, Matthay, Breithaupt, Leschetizky, and other works on structure and technique.
- (b) A second year, continuing *Pianoforte* (a). A program containing works by Bach, Beethoven, Chopin. (Typical pieces, second year, Beethoven, *Op. 14 No. 2*; Chopin, *Nocturne in B*, *Op. 32*.) Répertoire and Sight-reading.
- (c) A third year continuing *Pianoforte* (b). A program containing works by Bach, Beethoven, Schumann or Chopin or Brahms. (Typical works, third year, Haydn, *E flat Sonata 44*; Schumann, *Novelette in E*.) Répertoire and Sight-reading.

- (d) A fourth year, continuing Pianoforte (c) and including ensemble, chamber music and other concerted works. A program containing a concerto by Mozart, Beethoven, or Raff. (Typical works, fourth year, Bach, *Italian Concerto*, Beethoven, *Op. 22*; Brahms, *Scherzo in E flat Minor*). Répertoire and Sight-reading.
3. *Composition*.—Each half-year, 2 hours.
- (a) Counterpoint, melody forming; two-part counterpoint, first order. Harmony, first principles. Texts by Hale, Duncan, Goetschius, Spalding. Original melodic phrases. Ear-training.
- (b) Two-part Counterpoint, second and fourth orders. Harmony, elementary four-part writing. Texts as given above, with Chadwick, Foote, and Spalding. Original tunes harmonized. Ear-training.
- (c) Two-part Florid Counterpoint and Syncopated Counterpoint. Harmony, four-part writing. Texts as given above. Sketches in two-part and three-part song-forms. Ear-training.
- (d) Double Counterpoint, three-part Counterpoint. Harmony, modulation, Chromatic harmonics. Texts as given above with Norris. Song-forms with trio; Minuet. Ear-training.
- (e) Counterpoint; imitation; Canon. Texts by Goetschius, Spalding. Rondo. Ear-training.
- (f) Counterpoint; the Invention. Texts as given above. Sonata-Allegro. Ear-training.
- (g) Counterpoint, Figured Chorale. Sonata-Rondo. Ear-training.
- (h) Figured Chorale. Fugue. Ear-training.

DIPLOMAS.

Students satisfactorily completing Courses 1, 2 or 5 or 6, and 3a, b, c, d, together with a high school course or its equivalent, are entitled to receive the Diploma for Special Courses, except 3. Students specializing in Violin (Course 5) or Voice (Course 6) may substitute for Course 2 a satisfactory equivalent; but they must qualify in the requirements for admission to 2a (p. 97). The Full Diploma is awarded upon the completion of Courses 1, 2 or 5 or 6, 3 and 4; but students specializing in 5 or 6 must take at least 2a.

4. *Orchestration*.—Each half-year, 1 hour.

5. *Violin*: PREPARATORY.—

Dancla Violin Method (correct position of bow and violin).
De Beriot: The First Five Positions.

Laoureux: Practical Method (exercises in shifting and in different styles of bowing).

Böhmer: Studies in intonation in all the keys.

Hofmann: Melodic Studies in Double Stops, Book I.

Best examples of pieces in the smaller forms, including easy Sonatinas.

Duets by Pleyel, Gebauer, and others.

Memory and Interpretive Study from the beginning throughout the course.

Violin: COLLEGIATE.—

- (a) Hermann: Studies in all the positions.

Mazas: Études, Op. 36.

Blumenstengel: 24 exercises, Op. 32.

Kreutzer: Caprices (first half).

Stojanovits: Scale-technic. (Scales and arpeggi to be practiced in all the different styles of bowing.)

Sevcik: School of Bowing-technic.

Sevcik: Studies in Shifting.

Representative pieces by the best composers to be played in the first five positions.

Concertinos; Sonatinas; Sonatas.

- (b) Kreutzer: Caprices (second half).

Mazas: Études Brillantes.

Rode: 24 Caprices.

Stojanovits: Scale-technic (continued.)

Concertos by De Beriot, Kreutzer, Viotti, etc.

Classic pieces by the old masters, as well as compositions of the Romantic and Modern Schools.

Ensemble playing.

- (c) Fiorillo: 36 Études.

Campagnoli: 7 Divertimenti.

Gaviniés: 24 Études, "Matinées."

O. Sevcik: School of Technic.

Sonatas for Violin (with piano) by Tartini, Händel, and others.

Sonatas for Piano and Violin by Mozart.

Concert pieces; Concertos. Ensemble.

- (d) Sevcik: School of Technic (continued).

Sauret: Twenty Grand Études, Op. 24.

Works of the Celebrated Masters of the Seventeenth and Eighteenth Centuries.

Concertos by Bach, Mozart, Mendelssohn, Saint-Saens.
 Concerto for Two Violins and Piano, by Bach.
 Six Sonatas for Two Violins and Piano, by Bach.
 Sonatas by Beethoven, Grieg, and others. Ensemble.

Students are especially encouraged and prepared for recital and concert programs, and a recital of artistic merit must be given for graduation.

Orchestral practice and public performance in orchestra, as well as in solo work, are open to all violin students. Orchestral rehearsals are held once a week.

6. *Voice Culture.*—

- (a) Vocalises: Vaccai, Lamperti, Abt. Songs, Standard English and American. English diction. Sight-singing.
- (b) Vocalises: Lamperti, Marchesi. Songs, Standard English, American, German, French, Italian. German, French, Italian diction. Sight-singing.
- (c) Vocalises: Marchesi, Bordogni. Exercises in the Operatic Style. Arias, Opera and Oratorio. Special training for church singing and chanting. Diction. Sight-singing.
- (d) Entire scores of Operas and Oratorios, Cantatas. Classic Song-cycles. Diction. Sight-singing.

The final test for special course diploma embraces the musicianly performance, with mastery of voice, style, and interpretation, of an Italian and French aria, several English songs and German songs, a sight-reading test.

The final test for the Full Diploma: A musicianly performance, with mastery of voice, style, and interpretation of an entire song recital consisting of Italian, French, German, and English songs and arias, and a knowledge of one complete Opera and one Oratorio.

SPECIAL COURSES.

Pianoforte, Organ, Violin, Voice, the Orchestral Instruments, Counterpoint, Harmony, Composition, Orchestration, Public School Music. Students may enter these without examination, and pursue them for any desired period (but not less than one-half year or unexpired portion thereof). No credits are given unless some regular course be adopted later, in which satisfactory work will be permitted to count.

Through its weekly conferences conducted by the Dean, its course in General Musical Culture, its weekly and semi-annual recitals given by

students and faculty, its Glee Clubs and Orchestra, the Department provides the free and all-round advantages which can be had only in a well-equipped school. Students have the special privilege of consulting the Dean daily upon all practical problems arising in the course of their study. This, which is practically a daily lesson scheme, offers a great opportunity to the ambitious student.

NORMAL COURSE.

There is a growing demand in the secondary schools of Colorado and other states for teachers who, besides their liberal arts work, are competent to teach the pianoforte and the related musical theory. This department offers a normal course designed explicitly to qualify young men and women to do this work. The course qualifies equally for the private teaching of Music.

DIPLOMA.

A Teacher's Diploma is granted students who satisfactorily complete the normal course.

FINE ARTS MAJOR.

Candidates for the degree of A.B. may obtain a major in Fine Arts under the following conditions. They must take a minimum of eight half-year hours in music and the same amount in Art and Archæology. In addition six hours must be taken in one of these departments or divided among them. The remaining eight hours of the major shall be determined by the Committee on Individual Courses, in consultation with the major instructor. Music 1 (4 hours), Music 2 or 5 or 6, (2 hours—when taken in conjunction with courses 1 and 3) and Music 3 (4 hours, or 8 hours if taken a second year) and Music 4 (2 hours) are allowed to count toward this major.

EQUIPMENT.

The Department occupies the Perkins Fine Arts Hall, a beautiful College building of stone, erected in 1900, at a cost of \$30,000. It has at its command twelve class and practice rooms, a recital hall seating 100, and an auditorium seating 600, containing an exceptionally fine Hutchings pneumatic organ, which has three manuals and fifty stops and combinations.

The Department is affiliated with The Institute of Musical Art of the City of New York, and with The New England Conservatory of

Boston, and with Mme. Augusta Cottlow, of Berlin, Germany. Its standards are accepted in these cities precisely as those of Colorado College are at Harvard, Yale, and elsewhere.

TUITION.

Pianoforte, Organ, Voice, Violin, or Ensemble with Members of the Faculty—\$35.00 each half-year. Voice or Violin, 2 lessons weekly, \$50.00 each half-year.

Composition (including Harmony and Counterpoint) or Orchestration—\$15.00 the half-year.

Flute or other Orchestral Instruments—\$20.00 each half-year.

General Musical Culture (free to Music students)—\$10.00 each half-year.

Public School Music—\$25.00 each half-year.

General Information

LOCATION.

Colorado College is fortunate in its environment. Colorado Springs, the county seat of El Paso County, and the third largest municipality of the commonwealth, is remarkable for its history and character, and is admirably adapted to be the seat of a college. Founded in 1874, under the direction of men of shrewd foresight and broad views, it has maintained from the beginning high standards of morality and culture. Saloons and the attendant destructive influences are absent. Radiating railroad systems and neighboring gold fields have fostered its wealth. Many visitors are attracted hither, both pleasure seekers and health seekers, but the latter are so far outnumbered that the place has none of the depressing influences so often observed at noted health resorts. The lover of nature might seek far before finding a spot more favored. The mountains are close at hand, their serrated outlines occupying about one-third of the horizon. In the center of the range, less than a dozen miles away, stands Pike's Peak. Its summit is reached by a cog railway, by bridle paths, and by a carriage road. About its base are many cañons, and in one of these, around a celebrated group of mineral springs, is the city of Manitou. The climate of Colorado Springs has attained a world-wide reputation by reason of the dryness and rarity of the air, and the opportunity for outdoor exercise afforded by the great number of fine days (helpful in cases of malarial disease, asthma, and incipient phthisis). Students unable to work in other climates may here continue their studies, while at the same time making a permanent gain in health.

BUILDINGS.

The buildings of the College are situated on a tract of about 50 acres, in the heart of the best residence portion of the city. All except the building containing the shops are of stone. Heat and electric light are furnished to all from a central plant.

PALMER HALL, completed in the fall of 1903 at a cost of \$287,000, contains laboratories and general lecture rooms. The style of architecture is that which has been chosen for the entire system of buildings eventually to occupy the College reservation, and, like the Library and Perkins Fine Arts Hall, it is built of the "Peachblow" sandstone. The structure is fire proof. On the first floor are laboratories for Chemistry, Physics, Mining, Metallurgy, Electrical Engineering, and a large demonstration room. On the second floor are general lecture

rooms, and other laboratories for Chemistry. Near the head of the west stairway is a large bronze tablet, dedicated to the late General William J. Palmer by the survivors of the 15th Pennsylvania Cavalry. The third floor contains the laboratories for Biology, Geology, and Mineralogy, general lecture rooms, and a large, well-lighted Museum for the natural science collections of the College. The building was equipped at a cost of \$50,000.

THE PERKINS FINE ARTS HALL, named for one of the principal donors, the late Willard B. Perkins, of Colorado Springs, was completed in 1900. It is a two-story stone building, and cost \$37,000. The lower story is a large auditorium, seating 600, in which the chapel exercises are held and concerts and lectures are given. This room contains a valuable pipe organ, given by Miss Elizabeth Cheney, of Boston, Mass., in memory of her brother, Charles P. Cheney. The upper story contains the lecture and practice rooms of the Department of Music, and an exhibition room for works of art. Here now stand a bronze statue of the Flying Mercury, presented by James F. Burns, marble busts of Antinous and Dante, a portrait of General William J. Palmer, by Herkomer, a portrait of President W. F. Slocum, by Alexander, and a portrait of the late Professor Ahlers, by Benson. The portrait of President Slocum was presented at Commencement, 1913, by friends of the College, in celebration of his quarter-centennial of service.

THE LIBRARY, given in 1894 by the late N. P. Coburn, of Newton, Mass., and costing \$50,000, is of great architectural beauty and admirably adapted to its purpose. A full size cast of the "Winged Victory" of Samothrace, stands at one end of the main hall. In recesses are casts of the Hermes of Praxiteles and of Mercie's David. Mr. A. L. Dickerman's collection of rare Indian curiosities adds to the interest of the room.

THE ASTRONOMICAL OBSERVATORY is the gift of Henry R. Wolcott, of Denver, and was completed in 1894. Besides the dome room it contains a lecture room, a transit room, and a photographic dark room.

THE SHOPS. Two buildings contain the dynamo room and the shops for carpentry, forging, and machine work.

THE PRESIDENT'S RESIDENCE, at the northern boundary of the campus, was purchased in 1888, and remodeled in 1903.

CUTLER HALL (formerly Palmer Hall), the oldest building on the campus, was first occupied in 1880. It contains recitation rooms, and electrical and hydraulic laboratories.

COSSITT HALL. Through the generous gift of \$110,000 by Mrs. A. D. Juilliard of New York, a Men's Building has been erected. It was dedicated in June, 1914. It contains a finely equipped gymnasium, a stadium, reading rooms, dining hall, and a common room, and will be the center of the athletic and social life of the men of the college. The building was given by Mrs. Juilliard in memory of her father, and is called The Frederick H. Cossitt Memorial Hall. The dining hall is under the management of Miss Frances M. Rogers.

THE ADMINISTRATION BUILDING, formerly a residence, was presented to Colorado College in the summer of 1914. It adjoins the College campus, and provides convenient quarters for all the offices of administration. The Faculty Club, also, is established there.

THE UTILITY BUILDING, erected in the summer of 1914, overlooking Washburn Field, contains the Electrical Engineering Laboratory.

COLLEGE RESIDENCES.

HAGERMAN HALL, built in 1889, is used as a home for young men. Besides the students' rooms, it contains a large social room provided with piano, games, and magazines. On the roof and in the office of the Weather Bureau are the Meteorological Station instruments.

MONTGOMERY HALL was erected and furnished in 1891 by the Woman's Educational Society, and presented to the College. It provides a comfortable home for young women, and contains the rest room under the charge of the Young Women's Christian Association, for the use of all young women of the College.

TICKNOR HALL, the gift of Miss Elizabeth Cheney, was opened as a home for young women in 1898. Besides students' rooms, it contains an infirmary capable of complete isolation. The infirmary is open to all young women living on the campus, and is in charge of a trained nurse, whose services, whether in the infirmary or in the students' rooms, are paid for by an annual fee, due in September, of \$5.00 from each young woman.

MCGREGOR HALL, a commodious and convenient building, was opened in 1903 as a third residence for young women. It contains a fully equipped gymnasium.

BEMIS HALL, the center of the social life of the whole college, was opened in September, 1908. In it, besides rooms for young women, are the offices of the Dean of Women, a spacious Common Room, a large dining hall with an open wood roof after the manner of the English halls, and the Cogswell theatre for college dramatics.

LIBRARY.

MANLY DAYTON ORMES, LIBRARIAN.

The Library building has been elsewhere described (p. 104). In it are, altogether, about 68,000 volumes and 40,000 pamphlets. Twenty-five hundred volumes are in the Engineering Library. The leading literary and scientific journals are received, as are also the United States Government publications and those of the State of Colorado. Of United States documents the library now has about 10,000 volumes, including the records of Congress complete from 1847, and many valuable records for the period 1774-1847. These documents are arranged on the plan adopted in the library of the Superintendent of the United States Documents at Washington.

The engineering library is located in a large room 60 feet by 30 feet in the basement of the N. P. Coburn Library building. It contains 2,500 volumes on technology. This library has a complete set of the Engineering Record (formerly called the Sanitary Engineer), and Van Nostrand's Engineering Magazine; one hundred and seven volumes of the Minutes of the Institution of Civil Engineers of Great Britain; the recent volumes of the Engineering Magazine, Cassier's Magazine, Engineering News, Engineering and Mining Journal, Technical World, Electrical World, Mineral Industry, Electrical Engineer, Electrical World and Engineer, Electrician (London), Electric Journal, Technology Quarterly, Municipal Engineering, American Machinist, Journal of the Franklin Institute; the current numbers of Mining Science, Metallurgical and Chemical Engineering, Engineering Index, Chemical News, and Journal of the American Chemical Society; the recent transactions of the American Institute of Electrical Engineers, and the American Society of Civil Engineers. A complete set of the Scientific American and Scientific American Supplement, of the American Journal of Science, and the current numbers of other leading periodicals on pure science and mathematics, are kept in the main room of the Coburn Library. The engineering library has also the reports of the State Engineer, the United States Geological Survey, the United States Coast Survey, the Chief of Engineers and the Chief of Ordnance, U. S. Army, as well as the United States publications on Irrigation.

The Medical Alcove was created in 1894. It now contains nearly 3,000 volumes, including the transactions of Medical Societies, which, with standard works purchased annually, the El Paso Medical Society contributes—in all about a hundred volumes each year.

THE COBURN LIBRARY BOOK CLUB, organized in 1897, provides its members with the best new books, which are given to the Library after two years. The fee is \$5 a year or \$3 for six months. Members enjoy the full privilege of the Library. The Club has purchased 3,700 books, of which 3,400 have already been given to the Library.

The Wednesday Art Club and the local chapter of The Daughters of the American Revolution have started collections of books on their special topics.

A reading room is provided with the current literary and scientific magazines, as well as a number of leading newspapers.

The Engineering Department of the Library occupies a room in the basement prepared for the use of the Colorado Polytechnic Society. In addition to 1,500 volumes belonging to the College, it contains several valuable private libraries loaned by members of the society, to which students of the Engineering School have access.

In Room 44 of Palmer Hall are about 300 volumes, given to the Classical Department by Mrs. M. C. Gile, to form the beginning of a department library for Greek and Latin.

LABORATORIES AND APPARATUS.

CHEMISTRY.

THE CHEMICAL LABORATORIES include: (1) The General Laboratory; (2) the Qualitative Laboratory; (3) the Quantitative and Electro-Chemical Laboratory; (4) the Organic Laboratory; (5) the Assay Laboratory. The best features of modern arrangement and construction have been embodied in these. The lighting and ventilation have received special care. The hoods are generously distributed in every working room, and each hood is connected with a large separate flue. The ceilings are high, the light excellent, the desk and working space for each student is abundant, and the drainage through iron covered floor drains is of the most approved modern type. The desks are fitted with very full sets of reagents and all facilities for the prosecution of the work in hand. Adjacent to the laboratories are the preparation rooms, which provide for the ready distribution of supplies. Smaller rooms, which are used for particular branches of chemical study, are supplied with appropriate apparatus—fine balances, spectroscope, the best Schmidt and Hænsch polariscope, Atwater bomb calorimeter, photographic apparatus, combustion furnaces, and a large assortment of metal and glass apparatus for general and analytical processes of investigation.

THE ASSAY LABORATORY is equipped with muffle furnaces for solid fuel, and crucible and muffle furnaces for gasoline; a large furnace of reverberatory type for handling a large number of fusions at one time; ore bins; fuel bins; twelve new pulp balances, and several button balances, including two of the highest grade made by Ainsworth of Denver. It is also supplied with a large number of checked ore samples of various grades and kinds, donated by the American Smelting and Refining Company, the Ohio and Colorado Smelting and Refining Company, the United States Reduction and Refining Company, the Portland Mining and Milling Company, the Elkton Mining Company, Mr. E. C. Woodward and others.

BIOLOGY.

THE BIOLOGICAL LABORATORIES are eight rooms on the second floor of Palmer Hall. In these, each student is assigned a desk, and in courses requiring microscopic observation is furnished with a microscope for which he is held responsible. There is an abundant supply of all kinds of glassware necessary for the various courses, also micrometer eye-pieces, cameras, dissecting microscopes, paraffine baths, microtomes, life-boxes and charts. For the courses in Zoology, Comparative Anatomy, etc., a number of mounted and disarticulated skeletons and anatomical models are provided. A large amount of the museum material is also available for illustration in these courses. The physiological laboratory is supplied with such Harvard apparatus as the capillary electrometer, rheochord, inductorium, kymograph, moist chamber, heavy muscle-lever, ergograph, pneumograph, work adder, manometer, circulation scheme, respiration scheme, and many more kinds of pieces. In addition, there are on hand such pieces as Ludwig's arm support and sphymograph, Marcy's cardiograph, stethoscope, Erlanger's and Cook's sphygmomanometers for blood pressure determinations, Thoma Zeiss Hæmacytometer for the enumeration of the corpuscles of the blood, the Fleischl's hæmometer and Gower-Haldane hæmoglobinometer for the estimation of the hæmoglobin of the blood, Lombard's modification of Mosso's ergograph, and spirometer. The equipment for Bacteriology includes incubators, Arnold steam sterilizers, autoclav, hot-air sterilizers, Becker balance, Trœmner media scale, centrifuge, animal holders, culture jars, water sampling apparatus, inoculating water baths, double boilers, hot-water funnels, counting apparatus, and other appliances essential to the work. For botanical courses clinostats, auxinometers, and a variety of smaller apparatus are provided.

THE HERBARIUM occupies a room in the Biological Department. The nucleus consists of a Colorado herbarium purchased from Marcus E. Jones, and later enlarged. The larger part of the present collection is the Edward Tatnall herbarium, presented to the College by Miss M. H. Tatnall, of Elmira, N. Y. This collection, of about 22,000 species and varieties, includes representatives of all the great plant groups. Of these there are some 900 Algæ, 1,700 Lichens, 2,000 Bryophytes, 1,050 Pteridophytes, and 16,350 Angiosperms. These specimens, carefully and fully labeled, were collected in 23 different states, Canada, Sweden and England, by 65 collectors. A catalogue makes the herbarium especially valuable.

PHYSICS.

The general equipment of the laboratory is represented by the experiments of Millikan's "*Mechanics, Molecular Physics, and Heat*," and Millikan and Mills's "*Electricity, Sound, and Light*." There are also a large standard clock with a Shedd magnetic contact maker, a standard H. J. Green barometer presented by General Palmer, a Gærtner cathetometer, a recording chronograph, a standard meter and balances, and calipers and thermometers for precision work.

For advanced work in Electricity the equipment of the Electrical Engineering Department is available.

A photometer room with a Lummer-Brodhun photometer and a three-meter track is part of the equipment of the laboratory for work in light. There is also a large Michelson interferometer, several spectrometers, and an optical bench.

The lecture room of the Physics department is furnished with the most modern Bausch and Lomb Convertible Balopticon for the projection of transparent slides and for opaque objects such as photographs and drawings. The apparatus for experimental demonstration purposes is especially complete. Much of it has been imported from Max Kohl. There is a projection apparatus for polarizing light phenomena; a wireless telegraph set, a Tesla coil presented by Dr. Gerald B. Webb, of Colorado Springs; a collection of Crookes and Geissler tubes; a large Toepler-Holtz machine presented by the Alumni Association of Colorado College; several Wimhurst machines and an induction coil; and special apparatus for demonstration of phenomena in heat, sound, and mechanics.

GEOLOGY.

The general laboratory is provided with five large models and relief maps for the illustration of river work, glaciation, and vulcanism,

together with a complete set of the geological folios of the United States Geological Survey, and more than 1,000 topographic maps. Suites of rock specimens are provided, covering all the main types of the igneous, sedimentary, and metamorphic rocks, as well as representative specimens from important mining districts in Colorado. A carefully prepared collection of thin sections of rocks is available for microscopic study, covering the varieties of the igneous rocks and illustrating their mineralogy. Seibert petrographic microscopes are provided.

In the mineralogical laboratory a general collection, numbering several specimens for each of the 175 minerals taught in the introductory course, is set out in open cases for the illustration of the crystal forms and the variations in the massive kinds. Each student is given a working collection covering the same minerals. Crystallography is taught by means of 150 models of crystals in wood and by the aid of a small collection of transparent models. The material for the practice determinations required of every student embraces 5,000 specimens.

For the work in paleontology the collections of fossils in the College museum are employed, together with the departmental collection. They are representative of a large number of the genera in the several classes of invertebrates, and also of many of the extinct vertebrates.

The departmental material in the library comprises complete sets of the publications of the United States Geological Survey, Annual Reports, Monographs, Bulletins, and Professional Papers, with about 300 of the annual volumes issued by the state surveys, and general works of reference.

PSYCHOLOGY.

The equipment includes the following: Azoux dissectible model of human brain; Deyrolle "*Deux Demi-Tete*," showing distribution of cranial nerves; Deyrolle model of the spinal cord in cross section, much enlarged; Deyrolle model of the cord *in situ*, showing connections with the sympathetic system; lantern slides of gross and microscopic structure of nervous system. Models of the sense-organs are available from the Department of Biology, and cranial casts and crania of various races and animals from the Museum.

There is also one set of Helmholtz resonators, set of low forks, set of ten mounted tuning forks, four extra forks, Edelmann whistle, Quincke tubes.

A direct-current electric motor rotator with rheostat and speed recorder attached, spring suspension electric rotator, rheostat, Kirsch-

mann photometer, Pillsbury speed reducer, kymograph with magnetic speed control and long and short drums, 100-vibration tuning fork, triple electric recording pen, Jacquet graphic chronometer, Marey tambours, bell metronome, Vernier chronoscope, two pendulum chronoscopes, split-second stop-watch, plethysmograph, Smedley dynamometer, Titchener automatograph, olfactometer, temperature and pressure points, after-image apparatus, colored and gray discs and papers, stroboscope, stereoscopes, Stratton's pseudoscope and telestereoscope, Nagel color-blindness test, visual acuity tests, spectrum chart, complication apparatus, Jastrow exposure apparatus, tachistoscope, two campimeters, etc.

In addition to the regular equipment of the laboratory, the department of psychology has recently added a shop equipped with a South Bend lathe, wood-working, metal-working, jewelers', and watch-making tools. The shop is used for the repairing of apparatus, the building of new apparatus, and for making special pieces needed in research work.

SHOPS.

In addition to the training of hand and eye necessary for his future studies in drafting and design, every engineering student should acquire practical knowledge of carpentry, wood turning, pattern-making, blacksmithing, tool-making, machinists' bench and vise work, and the handling of machine tools. Such practical knowledge is essential to the engineer in forming his judgments on the details and the possible execution of his designs in the shop. To afford training along these lines, as well as to give the student a foundation for further work along the lines of structural engineering, three shops containing machinery of the latest and most approved patterns have been established.

1. *Wood Shop*.—The Wood Shop occupies a room 30x60 feet. It has electric drives. It is equipped with heavy maple-top cabinet benches, each having a tool cabinet furnished with the best make of tools, comprising Bailey planes, Buck Brothers' chisels, Disston saws, etc. Six wood-turning lathes of 14-inch swing have been added to the equipment, making in all twelve lathes. The laboratory has also a 32-inch band saw, a table saw, 24-inch cylinder planer, mitre saw, hand saws, a universal wood trimmer, clamps, hand screws, and tool sharpening machinery.
2. *Forge Shop*.—This occupies a room 30x30 feet with a stock room 10x15 feet adjoining. A twenty-horsepower General Electric

variable speed motor drives Sturtevant blast and suction fans connected with Buffalo down draft forges. The equipment consists of swage blocks, benches, vises, lockers, emery grinder, hand forge, etc.

3. *Machine Shop*.—The Machine Shop occupies a top-lighted room 25x100 feet. A steam engine drives the equipment and serves as an illustrative piece of apparatus. The equipment consists of machinists' benches; bulldog vises, drawers containing individual sets of tools; two 14-inch Bradford engine lathes; an E. E. Reid screw-cutting lathe; a Hendey-Norton 14-inch precise tool room lathe; a shaper; a Cincinnati universal milling machine with various attachments including a dividing head; a Gray planer, 24"x24"x6 feet, with double heads on cross rail, and micrometer screw adjustment; a Greenfield universal tool and cutter grinder, adapted for grinding to size, straight and taper arbors, conical or cylindrical work, internal sizing, reamers of various kinds, milling cutters, taps and dies, countersinks and counterbores; an electric centre grinder; a large and small drill-press; an emery grinder; a machine hacksaw; grinding machinery, a gas brazing furnace; a gas annealing furnace; a pneumatic chipper, calker and riveting tool; several kinds of micrometers; face plate for finishing surfaces; large steel machinists' rules, etc. As need arises other equipment will be added to this and other mechanical laboratories.

CIVIL ENGINEERING LABORATORIES.

1. *The Testing Laboratory*.—A room in the Mechanical Laboratories building has been assigned for the testing of materials of construction. Here is mounted a 100,000-pound Riehle testing machine for making tension, compression, shearing and transverse tests, and an abrasion cylinder for testing paving material; both machines are driven by a five-horsepower Crocker-Wheeler motor. In addition to other accessory apparatus a Henning extensometer is available for tension tests, and an Olsen compression micrometer for compression tests, each instrument reading to one-ten-thousandth of an inch. Each student is required to make a series of tests upon the resisting properties of wood, brick, concrete, stone, wrought iron, cast iron, and steel. Commercial tests, made from time to time for local manufacturers and others, bring the students into close touch with practical work of this sort.

2. *The Cement Testing Laboratory* in the basement of Cutler Hall is equipped with a Fairbanks testing machine, Vicat indenting apparatus, sand and cement sieves, briquette moulds, cube moulds, Gilmore's needles, running-water, storage tanks, and other apparatus requisite for investigations in the nature and physical properties of cement and cement mortars. All students are required to make the test briquettes of cement and cement mortar, as well as to determine the weight, fineness, and other physical properties of such cement, sand, and mortar, as may be assigned to them for examination.
3. *The Hydraulic Laboratory* is in the basement of Cutler Hall. It has a floor space of 2,000 square feet, and is furnished with an ample supply of water. It is equipped with a calibrated tank of 1,500 gallons capacity; weirs of different shapes and sizes, and with a variety of orifices for the purpose of determining hydraulic constants; apparatus for experiments in connection with the flow of water through pipes; a Venturi meter and a series of displacement meters including one each of the piston, rotary, and disc types; pressure gauges, differential gauges, thermometers, etc., as well as the portable tanks and scales usually found in such laboratories. To illustrate the principles of water motors there are a small centrifugal pump, a nine-inch Leffel turbine in a cast-iron globe case, and a twelve-inch Doble impulse wheel, designed especially for laboratory purposes. It is made with an adjustable nozzle, and furnished with a glass casing instead of the usual metal one, so that the action of the jet may be seen.

SURVEYING.

The Department possesses a complete working equipment of engineers' field instruments, including four plain transits, a K. & E. complete transit, a complete Berger mining transit with interchangeable top and side telescope, a Saegmuller mining transit with solar attachment, a Young and Sons mining transit with top telescope and Smith solar, a Buff and Buff triangulation transit of the U. S. Coast and Geodetic Survey pattern, a surveyor's compass, a Burt solar compass, four wye levels, two dumpy levels, a plane table with telescopic alidade, a traverse table, a U. S. Navy pattern sextant, as well as smaller instruments and accessories. Students learn the use and adjustment of the field instruments at the Summer School of Surveying, held for four weeks during June and July at Manitou Park.

Summer School of Surveying.—Field work in surveying is done under exactly the same conditions that prevail in actual practice. This work is carried on as a continuous exercise of four weeks' duration at Manitou Park, immediately after the close of the regular College exercises, at the end of the Freshman and Junior years. The work is done under the direction of the head of the Civil Engineering Department and a corps of experienced assistants. The class is divided into squads furnished with all necessary equipment. Each squad is required to execute a stated number of surveys and to make complete notes and maps as would be required in practice. Manitou Park, the property of Colorado College, contains six thousand acres and is situated about twenty-seven miles northwest of Colorado Springs. Within the bounds of this Park are found every kind of ground over which surveys are carried. Adjacent to the Park are many mining locations and several patented claims.

The College furnishes living accommodations for the students. Students provide their own bedding.

ILLUSTRATIVE APPARATUS AND MATERIAL.

Lantern Slides, Photographs, and Trade Catalogues.—The Department has a representative collection of lantern slides on steam engineering, machine design, metallurgy, and electrical engineering; and blue prints, photographs and descriptive data of various engineering structures. The department drafting rooms contain complete reference files of catalogues and blue prints pertaining to their special engineering branches, which are freely used in connection with those courses requiring design work.

Geometrical Models and Balopticon.—For illustrating subjects in descriptive geometry and graphics there are in the drafting room a number of models prepared by students, including half a dozen thread models of ruled surfaces, bridge trusses, and machines. In the mathematical class-room there are a number of models of wood and plaster of Paris. The Department also has a Bausch and Lomb Balopticon of the latest pattern, by means of which photographs, cuts from magazines and newspapers, and any small drawing, up to 5x7 inches in size may be projected directly upon the screen without the necessity of having lantern slides made.

ELECTRICAL ENGINEERING LABORATORIES.

1. *The College Power Plant*, which is available for the purposes of the Department of Electrical Engineering, consists of four 115-volt G. E. compound generators direct connected to G. E. marine engines. These generators are rated at 15 kw., 15 kw., 30 kw., and 50 kw., respectively. They are connected to a switchboard with an ammeter and a voltmeter for each machine, and a ground detector for the system. There are also feeder panels for distribution. The two 15 kw. units are used for student experiments on the parallel operation of compound generators.
2. *The Electrical Engineering Laboratory* is located in its new quarters in the Utility Building overlooking the athletic field. The main laboratory is twenty-two feet wide and fifty-eight feet long. This new laboratory with its concrete floor, high ceiling and good afternoon light adds greatly to the department's efficiency. It contains a G. E. 10-h.p., variable speed interpole motor; a Holtzer Cabot 1-h.p. series motor; a Westinghouse 20-h.p. compound motor with machine tool controller; a G. E. 25-h.p. motor with armature speed controller; and a Westinghouse $12\frac{1}{2}$ kw. compound wound interpole generator or motor. Two 1.75 kw. compound wound Crocker-Wheeler generators are used for parallel running, "pumping back," or similar tests. All of the above are for 110 volts.

The alternating current equipment consists of a Westinghouse 10 kw., one-, three-, and six-phase, 110-volt D. C. rotary converter; a 15-h.p. Westinghouse three-phase, 220 volt synchronous motor; a 15-h.p. Westinghouse three-phase, 220 volt induction motor, supplied both with a squirrel cage and wound rotors; two 15 kw. G. E. special three-phase alternators; one La Roche special alternator (with armature composed of two parts, so that a mechanical displacement of phase from 0° to 90° may be obtained), rated at 25 kw., 2,000 volts, and 125 cycles, but at present run two-phase, 550 volts and 60 cycles; a 5-h.p., three-phase induction motor; a 5-h.p. Westinghouse, single-phase series motor; two G. E. type H transformers; two Maloney transformers; a $12\frac{1}{2}$ kw. three- and six-phase Westinghouse transformer; three single-phase reactance coils; and a 50 kw., 60-cycle testing transformer giving voltages up to 70,000 volts. There is also a three-phase oscillograph giving simultaneous representation of e.m.f. and current wave forms.

3. *The Electrical Testing Laboratory* of the Department is located in the south wing of the Engineering Building, Cutler Hall. It contains a complete and high-grade equipment for the measurement of resistance, inductances, and capacities; the measurement of magnetic constants; and the calibration of both direct and alternating current measuring instruments. There are, for example, fourteen galvanometers representing various types, both ballistic and non-ballistic, in Thomson and D'Arsonval forms. A Siemens and Halske astatic, and a Hartmann and Braun ballistic D'Arsonval should be mentioned especially. For the measurement of resistances, in addition to the regulation type of Wheatstone bridges, post office boxes, and test sets, there is a Kelvin low resistance bridge with standardized coils of 0.001 to 0.01 ohm; a Carey-Foster bridge; four O. Wolff high resistance boxes; a Leeds 0.1 ohm standard; two Wolff standards for 0.1 and 0.01 ohm; two Leeds N.B.S. standards for 1 and 10 ohms. For the comparison of potentials there are three standard cells; a potentiometer with a volt box for extending its range; a quadrant electrometer; a Siemens and Halske electrometer, and three Siemens and Halske torsional voltmeters with volt boxes. For the measurement of power there are several electro-dynamometers capable of use either as ammeters or as wattmeters. For the direct measurement of current, potential, or power, there are eighteen voltmeters, twenty-two ammeters, and eleven wattmeters of various ranges, some for d.c. and some for a.c. measurements. Standardized current and potential transformers greatly multiply the range and use of the a.c. meters. These instruments are portable precision instruments, and with the station instruments of the department are first calibrated by the student in the testing laboratory and then used by him in measurements on the machines in the electrical engineering laboratory. For measurements in inductance and capacity, besides several standards for each, there is a Siemens and Halske solenoid for ballistic galvanometer calibration, a variable standard of self and mutual induction, and a Siemens and Halske bridge for measuring small inductances. For measurements in magnetism there may be mentioned especially a Hartmann and Braun permeameter set, a Hopkinson yoke permeameter, and a Du Bois magnetic balance. A three-meter photometer track with a

Lummer-Brodhun photometer permits of measurements of the horizontal and mean spherical candle power of lamps. Among the remaining instruments should be mentioned a sechometer, an ohm and faradmeter, a Kohlrausch bridge, a Cardew hot wire voltmeter, and a tachometer with voltmeter.

The Department owns several switchboard instruments, some recording, representing the following types: Diamond, Bristol, Federal, Sangamo, Duncan, Shallenberger, Edison, G. E., Westinghouse, and Thompson-Houston. The Department also possesses a large collection of machines and instruments which are commercially obsolete, but of great historical or scientific interest. There are also samples of Thomas, Locke, and G. E. porcelain insulators; an assortment of Hemengray glass goods; parts of Weston instruments showing their construction; an exhibit of G. E. incandescent lamps showing the steps in their manufacture; and a collection of fuses from the Johns-Manville and the D. and W. Fuse Co.

THE MANITOU FOREST—A FIELD LABORATORY IN FORESTRY.

The Manitou Forest is a tract of 6,000 acres, situated twenty-seven miles from Colorado Springs and about eighteen miles north of Pike's Peak. It is reached by the Colorado Midland Railroad to Woodland Park, twenty miles, and then by stage, seven miles. It is within the boundaries of the Pike National Forest. Camp Colorado, a group of cottages used in conjunction with the School of Engineering, makes a most convenient and homelike center for the field courses.

The Forest is under the direct supervision of the School of Forestry. It affords unusual opportunities for study and practical experience in the field. This tract has a good stand of Western Yellow Pine and Douglas Fir. Much of the timber is mature, and logging and milling operations are now being carried on. An abundant young growth is replacing the timber that is being removed. The rich land along a stream which waters the valley offers an excellent opportunity for the establishment of nurseries and the study of tree planting. The forest is being brought into the best possible producing condition. The students are given opportunity, under the direction of the Forestry Department, to take part in all the phases of the treatment and management of the forest.

The College has a good working equipment of axes, saws, calipers, surveying instruments, meteorological instruments, and such other apparatus as is needed in the study and care of the forest.

OBSERVATORY AND METEOROLOGICAL STATION.

THE OBSERVATORY has a telescope of four-inch aperture, presented by Mr. Henry R. Wolcott, of Denver, a transit and a sidereal clock, both given by the late Charles S. Blackman, of Montreal, Canada. The College Meteorological Station, now in Hagerman Hall, is well equipped with recording instruments. The largest of these instruments, the quadruple register, given by the late General William J. Palmer, records minute by minute the direction and velocity of the wind and the sunshine and rainfall. In shelters are instruments for measuring and recording temperature and humidity. A Draper barograph, given by the late Dr. S. E. Solly, affords a continuous record of the atmospheric pressure. In Coburn Library are bound records of the beginning of the meteorological library, valuable accessions to which have been received from the late General Palmer.

Special information has been furnished on request to the city engineer and to several railway companies, while tabulated statements of the current weather are supplied regularly to the local newspapers, to the city health officer, and through the Chamber of Commerce, to various applicants at home and abroad who desire them for publication.

MUSEUM.

EDWARD ROYAL WARREN, DIRECTOR.

The Museum is on the second floor of Palmer Hall. Glass showcases extend on all sides of the room. The central part is taken up with the larger specimens. The megatherium stands in the west half, and the mounted skeleton of a whale occupies the eastern portion. Grouped around them are the large natural history specimens, casts of noted fossils, and at intervals are showcases for small specimens.

The foundation of the Museum was laid by the gift of Winfield S. Stratton.

PALEOBOTANY is represented by two cases of Carboniferous, Cretaceous, and Oligocene plant remains classified by Mr. Baker.

PALEONTOLOGY.—Several cases are given up to the display of the invertebrate fossils, which are zoologically arranged. The collection contains typical and rare forms of foraminifera, corals, crinoids, brachiopods, mollusca, and arthropoda. The mollusca and echinoderms collected by Prof. Cragin are for the most part from the lower Cretaceous. The mollusca from the Atlantic slope, presented by Prof. Wm. B. Clark of Johns Hopkins University, are chiefly Tertiary. Besides an excellent geological record, the collection contains a series of casts of noted specimens.

The foundation for the collection in vertebrate paleontology was laid by the purchase for the college of the large paleontological cabinet of Prof. Cragin by General Wm. J. Palmer and the Colorado Springs Company. This collection consists of some 8,000 specimens from Colorado, Kansas, Indian Territory, Texas, and other states, and includes remains of Pliocene horses, llamas, Miocene rhinoceroses and mastodons, Cretaceous saurians, and tertiary fishes. It is of importance not only as supplying a large part of the geological record not otherwise represented in the Museum, but also as containing the types of many new species and some new genera of fossils. Among these type fossils the most important is the large plesiosaurian reptile *Trinacromerum*, the type of a new genus and species described from the Cretaceous of Kansas in 1888. Another valuable item of the collection is the extensive series of casts of fossil vertebrates given by W. S. Stratton. These casts include such forms as the Ichthyosaurus, Archæopteryx, Glyptodon, Dinotherium head, Elephas heads, Mastodon head and tusks, Megatherium and restorations of the Colossochelys, Plesiosaurus, Mammoth, and other forms.

ZOOLOGY.—The collections of Invertebrate Zoology occupy a series of table cases along the south side of the room. They comprise representatives of the different groups, such as the Protozoa, Cœlenterata, Mollusca, etc. These have been recently rearranged and provided with descriptive labels which it is hoped will be found useful to students.

A representative series of the Myxomycetes or Mycetoza of Colorado, collected by Dr. Sturgis and Mr. Ellsworth Bethel, have recently been added to these collections, and Professor Schneider has presented a large series of the Butterflies and Moths of Colorado mounted in Denton tablets.

Vertebrates are well represented by the large natural history collection received through the generosity of W. S. Stratton. It contains 29 species of fishes, among which are the blue-shark, a few ganoids, and several curious tropical forms. Among the 23 species of reptiles, the most important are the Indian crocodile, python, iguana and the gila monster. The collection includes 442 species of birds, including such interesting forms as the ostrich, cassowary, Australian crane, apteryx, and Argus pheasant. The ornithology of all parts of the world is represented by the more striking forms. The mammals number 170 and include a group of mounted orangutans, a group of all known genera of marsupials, the Indian elephant, rhinoceros, nyghau, polar bear, and a complete mounted skeleton of a large whale.

Through the generosity of General Wm. J. Palmer, the Museum has acquired the unrivalled collection of Colorado and other birds accumulated during the past thirty-five years by Mr. C. E. Aiken of this city. About one hundred and fifty of these have thus far been mounted for exhibition and are displayed in one of the wall cases on the south side of the Museum. The rest of the collection is in the form of skins, and is arranged in two large cabinets in the Director's room; it is available for study by any one who wishes to make use of it. All the birds are fully labeled and a complete card catalogue has been prepared.

A small collection of bird's eggs, mainly the gift of Ivan C. Hall, of the class of 1908, has been placed on exhibition.

A collection of Colorado Mammals is being made. This now contains over fifty mounted specimens of local species, and additions are being made. These are exhibited in the case next to the Aiken birds.

A study collection of mammal skins has also been added. These are in a cabinet in the Director's room.

A collection of Colorado fishes, amphibians, and reptiles, has been begun. They are in a show case in the large hall.

MINERALOGY.—The collection in mineralogy occupies the north side of the room and includes 1,450 specimens of minerals, common, commercial and rare.

ETHNOLOGY is represented by a series of casts of skulls and brains of different peoples. The series also contains 125 masks of South Sea Islanders and 25 framed pictures of different races.

ANTHROPOLOGY.—The anthropological department contains a large amount of pottery from Missouri, New Mexico, and Peru; the Taos Pueblo, Pueblo Bonito, and DeChelly ruins are reproduced in miniature. The Bixby-Lang and Deane collections from the Cliff-dwellings were received through General Palmer. The Bixby-Lang collection was made in Southeastern Utah and Northern Arizona during the years 1897-'98. The collection includes almost 500 specimens of pottery, implements, skulls, and mummies. The specimens of pottery are exceptionally well preserved. The Deane collection was made in Western New Mexico and includes over 800 specimens of pottery, implements, skulls, and idols.

There is also a collection of Egyptian antiquities received from the Egyptian Exploration Society, of which Colorado College is a member.

RELIGIOUS LIFE.

The College is distinctly Christian, and recognizes character as the highest attainment. It is unsectarian in its management. Entering students are asked what their denominational affiliations are, and what churches in the city they desire to attend; lists are sent to the pastors of these churches, who seek out the students and bring about them the influence of church homes. Morning prayer is held in the chapel daily, attendance being required of all students. Every Friday the President discusses questions bearing directly on student life.

In September, 1911, the College Vesper Service was established. It is held every Sunday afternoon during term time at five o'clock. A vested choir of twenty-four voices leads in the music under the direction of Mrs. J. S. Tucker. The attendance of students is not required, but there is a large voluntary attendance.

The list of preachers for 1914-'15 is as follows:

The Right Reverend Benjamin Brewster, D.D.

R. W. Corwin, M. D.

President Livingston Farrand, M.D., LL.D.

The Very Reverend H. Martyn Hart, D.D.

Dr. Lawrence J. Henderson.

Mr. Harry McAllister, Jr.

The Right Reverend Francis J. McConnell, D.D., LL.D.

Mr. A. D. Parker.

Dean Edward S. Parsons, B.D., Litt.D.

Dean Warren M. Persons.

Reverend Harris F. Rall.

Reverend William W. Ranney.

Mr. Arthur Rugh.

President William F. Slocum, D.D., LL.D.

Reverend Merle N. Smith, D.D.

Reverend James H. Spencer.

Judge Edward C. Stimson.

Reverend Arthur N. Taft.

Reverend Allan A. Tanner.

The Right Reverend Nathaniel S. Thomas, D.D.

Reverend Frank H. Touret.

Reverend Floyd B. VanKeuren.

The Young Men's and the Young Women's Christian Associations are represented by strong branches, under the auspices of which are conducted mission work at home and abroad, classes for Bible study,

religious services in neighboring villages, socials, and work among the boys of the town. Religious meetings are held every week. The Associations send delegates to the state and national conferences. The Young Men's Christian Association has as Secretary Mr. T. L. Kirkpatrick, who devotes his full time to the work.

The Student Volunteer movement is represented. Of the former members of the band, some are continuing in other institutions their preparation for the foreign field, and others are already actively engaged in missionary work.

At the beginning of the College year, members of the Associations meet all trains and welcome new students.

STUDENT PUBLICATIONS.

The Tiger, a semi-weekly newspaper, is issued by an editorial board composed of College students. An annual, *The Pike's Peak Nugget*, is published by the Junior class. A *Handbook* of information is issued at the beginning of the College year by the Y. M. C. A.

LITERARY SOCIETIES.

The Apollonian Club and the Pearsons Literary Society, composed of young men; the Minerva Society, the Contemporary Club, and the Hypatia Society, composed of young women, hold weekly meetings for debate and other literary work.

THE ENGINEERS' CLUB.

The Engineers' Club of Colorado College was organized in the fall of 1910, and is the outgrowth of the Chemical Club. Engineering students of the three upper classes are eligible as members, and Freshmen engineering students are eligible as associate members. Meetings are held in the club room in the Engineering Building every Friday evening; once a month an engineer or business man appears before the club, giving a talk on his especial line; on the other Friday evenings the members present papers and have discussions on engineering problems, current events, and the like. Thus the club not only affords the opportunity for its members to hear talks by successful engineers, but also gives them practice in debating and presenting subjects before an audience.

FORESTERS' CLUB.

A Foresters' Club meets fortnightly during the winter term to consider current events in forestry and discuss papers of professional interest.

THE ASSOCIATED STUDENTS OF THE COLORADO COLLEGE.

For the management of all activities in which the whole student body is interested, an organization composed of all registered students has been formed under the name of "The Associated Students of The Colorado College." This organization was created in the spring of 1909. Its officers, elected annually on the second Friday in May, consist for 1914-'15 of the following, who constitute the Student Commission:

President—Wilfred D. Van Stone, '15.

Vice-President—Ruth Wallace, '15.

Secretary—Hester Crutcher, '15.

Treasurer—Elbert Wade, '15.

Editor of the Tiger—William Argo, '15.

Manager of Debating—James Hall, '15.

Senior Member Athletic Board—Ralph L. Hall.

Junior Member Athletic Board—Mack Davis, '17.

Senior Member Tiger Board—Judson T. Williams, '15.

Alumni Member Athletic Board—Herbert G. Sinton, '11.

Junior Woman Representative—Prudence Walker, '16.

Under Class Representative—Lee Glezen, '17.

President Campus Association—Wendell Stocks.

President Women's Student Government Association—Dorothy Wilkin.

ORATORICAL AND DEBATING CONTESTS.

All contests in public speaking are in charge of the Department of Public Speaking and the Manager of Debating, a member of the Student Commission. Two intercollegiate debates are held during the second half-year, and there is an annual public debate between representatives of the Apollonian Club and the Pearsons Society.

PHI BETA KAPPA.

A charter of the Phi Beta Kappa Society was granted to Colorado College in 1904. The object of the Society is the promotion of scholarship and friendship among students and graduates of American colleges. The members of the Society are elected primarily from the best scholars of the graduating classes of the College; secondly from the graduates of the College whose work after graduation entitles them to such honor; and lastly from any persons distinguished in letters, science, or education. In addition to scholarship, power of leadership and good moral character are the qualifications for membership.

Recently the rules of election to membership have been modified somewhat. Two members are elected from each Junior class. In the Senior year additional elections are made, increasing the total number to not more than one-seventh of the regular members of each graduating class in the College of Arts and Sciences. No student is eligible who does not take his Junior and Senior years in Colorado College.

THE COLORADO COLLEGE PUBLICATION.

Under this title is now included the scientific publication formerly issued as "COLORADO COLLEGE STUDIES," as well as the announcements of the various departments of the College, the annual catalogue, etc. This publication appears every six weeks during the academic year.

The following have been published during the academic year 1913-'14:

Science Series:

- Vol. XII, No. 13. The Birds of El Paso County, Colorado, I.—
Charles E. H. Aiken and Edward R. Warren.
 (General Series, No. 74.)
 The Birds of El Paso County, Colorado, II.—
Charles E. H. Aiken and Edward R. Warren.
 (General Series, Nos. 75 and 76.)

Social Science Series:

- Vol. II, No. 8. Thirty-Ninth Annual Report of the President of
 Colorado College.—*William F. Slocum.*
 (General Series, No. 70.)

Bulletin Series:

- No. 42. Views of Colorado College.
 (General Series, No. 71.)
 No. 43. Catalogue of Colorado College.
 (General Series, No. 72.)
 No. 44. Announcement of the Department of Forestry
 of Colorado College.
 (General Series, No. 73.)
 No. 45. Announcement of the Judson M. Bemis Depart-
 ment of Business Administration and Banking of
 Colorado College.
 (General Series, No. 76-A.)

COLLEGE LECTURE COURSE.

The College Lecture Course, established in 1894, has been continued annually since that time. These lectures have been given by members of the College Faculty and others, on literary, scientific, and

popular topics, in Colorado Springs, and occasionally in other cities. In the spring of 1914, five courses were given: a general course on a variety of topics; three special courses on Latin poets and Greek religion, by Professor Clifford H. Moore, Exchange Professor from Harvard University; and a course of readings by Professor S. H. Clark, of Chicago University. The list of lectures and readings is as follows:

GENERAL COURSE:

- Arbitration and the Hague Conference,
PRESIDENT SLOCUM.
- American Forestry and the Practice of Forestry,
PROFESSOR TERRY.
- German Industrial Education,
DEAN PARSONS.
- The Process of Adaptation to High Altitude,
PROFESSOR SCHNEIDER.
- Spanish-American Poets,
PROFESSOR HILLS.
- The Service of Economics,
PROFESSOR PERSONS.
- Recent Advances in Surgery,
DR. L. W. BORTREE.
- Munich,
DEAN PARSONS.

LATIN POETS FROM LUCRETIVS TO THE AUGUSTAN AGE:

PROFESSOR CLIFFORD H. MOORE.

- Lucretius: the Philosopher.
- Lucretius: the Moralst and Poet.
- Catullus.
- Tibullus and Propertius.
- Virgil: Tityrus et Segetes.
- Virgil: Aeneia Arma.
- Virgil: The Inferno.
- Horace: The Lyric Poet.
- Horace: The Commentator on Life.

GREEK RELIGION FROM HOMER TO THE TRIUMPH OF CHRISTIANITY:

PROFESSOR CLIFFORD H. MOORE.

- Religion in Homer and Hesiod.
- The Search for Salvation. The Orphic Sect and the Mysteries.
- Religion in Imperial Athens of the Fifth Century.

- Religion in Athens of the Fourth Century. Plato and Aristotle.
- Religious Philosophy after Aristotle.
- The Victory of Greece over Rome.
- Oriental Religions in Western Europe.
- The Conflict between Christianity and Paganism. The Triumph of Christianity.

COURSE OF READINGS.

PROFESSOR S. H. CLARK.

- Brieux: The Red Robe.
- Thackeray: Vanity Fair.
- Hamlet.
- Richard III.

OFFICERS OF THE ALUMNI ASSOCIATION.

- WILLIS R. ARMSTRONG, Colorado Springs *President*
- LILLIAN JOHNSON, Colorado Springs *First Vice-President*
- ELLA L. WARNER, Denver *Second Vice-President*
- S. WILKIE DEAN, Chicago *Third Vice-President*
- LESTER E. GRISWOLD, Pittsburgh *Fourth Vice-President*
- ANNA STRANG, Pueblo *Fifth Vice-President*
- LENORE POLLEN, Manitou *Secretary*
- FRED M. GERLACH, Colorado Springs *Treasurer*

- | | | |
|---------------------|---|--------------------------------------|
| WILLIS R. ARMSTRONG | } | <i>Executive Committee</i> |
| L. W. BORTREE | | |
| LILLIAN JOHNSON | | |
| HUGH MCLEAN | | |
| FRED M. GERLACH | | |
| ELLA L. TAYLOR | | |
| LENORE POLLEN | | |

EXPENSES.

- Tuition by the year (except in department of Forestry) \$60.00
- Tuition in Department of Forestry:
- Regular course for full year (ten months) 60.00
- Summer Course alone (four weeks) 12.00

Students who register for less than eight hours of work pay the usual entrance fees, and \$10.00 for each half-year course. Anyone wishing to attend lectures or recitations without receiving credit upon the College records may secure the privilege of such attendance on the payment of \$5.00 for each half-year course.

Matriculation fee.....	\$5.00
(From the above-named fees there is no rebate in case of withdrawal or dismissal.)	
Athletic and "Associated Students" fee.....	5.00
Board by the half-year in halls (for women).....	75.00
Board in Cossitt Hall, by the week (for men).....	4.50
Board in the Spring vacation, by the week.....	4.00
Rooms, warmed, furnished, and lighted, by the year, for each occupant.....	\$40.00 to 80.00

The standard rental is \$80. The number of rooms under that price is very limited. Application should be made early. Rooms are rented by the year, and will be retained for incoming students only when the application is accompanied by a deposit of \$5.00. This fee will be credited on the bills for room rent, and will be refunded only in case the room is given up by September first.

No young woman will be received into the halls who is not of full college rank, who is less than sixteen years of age, and who is not taking at least fifteen hours' work or its equivalent. Young women from out of town are required to live on the campus.

The women's residence halls are usually closed during the Christmas recess for cleaning and repairs.

Young men who room off the campus can obtain rooms at prices similar to those charged by the College.

Students who room in the College residences are required to furnish towels, bed linen, and blankets.

Nurse's fee (for young women only): see p. 105..... \$5.00

Fees of College physician:

Office consultation.....	.50
Visits to rooms.....	1.00
Infirmary fee (including meals), a day.....	1.00

For prolonged illness and in cases of contagious diseases, a special nurse is employed, and the expenses are charged to the patient.

The following is an estimate of the necessary expenses for the college year (not including matriculation fee, nurse's fee, cost of textbooks, laundry, and incidentals):

Tuition, \$30 each half-year.....	\$60.00	\$60.00
Room rent, \$20 to \$40 each half-year.....	40.00	80.00
Board, \$75 each half-year.....	150.00	150.00
	<u>\$250.00</u>	<u>\$290.00</u>

In addition to these items, fees are charged for the use of apparatus and materials in the various laboratories, as follows: Psychology, p. 47; Physics, p. 77; Chemistry, p. 72; Biology, p. 75; Geology (Course 2), p. 77; Civil 2, p. 81; Civil 82, p. 85; Field Courses in Surveying p. 86; Electrical Laboratory, p. 89, Note; Shop, p. 92. (These fees are paid directly to the respective departments at the beginning of each term.)

An additional charge of \$5.00 is made on the last term bill of the Seniors to cover expenses of graduation.

The bills for tuition, room rent, and board are issued at the beginning of each half-year, and are payable immediately. Students who withdraw before the end of the term pay full tuition. Students who withdraw less than six weeks before the end of the term pay full board and room rent. No deduction will be made for short absences during the term. In case of withdrawal more than six weeks before the end of the term, half of the room rent and the whole of the amount paid for board for the unexpired portion of the term will be returned to the student. The date of withdrawal is reckoned from the time when official intimation of the fact has been received from parent or guardian.

Remittances should be made by draft or money order.

The degree will not be granted to any student whose college bills are not paid before Commencement.

SCHOLARSHIPS.

The income of the following scholarships is devoted to the aid of worthy students who may need assistance in completing their course, and who, by their scholarship and character, prove themselves worthy of such assistance:

The Thomas Davee Scholarship of \$500, established by the late Mrs. T. V. D. Mitchell, of West Minot, Maine.

The Rice Scholarship of \$700, established by friends of the Rev. Chas. B. Rice, D.D., of Danvers, Mass.

The Currier Scholarship of \$1,000 founded by the late Hon. Warren Currier, of St. Louis, Mo.

The Edwards Scholarship of \$500, given by the Congregational Church of Wellesley Hills, Mass.

The Mary Caroline Quincy Scholarship of \$500, given by the late George Henry Quincy, of Boston, Mass.

The Lawrence Myers Scholarship of \$1,000, and the Lucy Platt Myers Scholarship of \$1,000, given by Mrs. Lætitia M. Myers, of Plainfield, New Jersey.

The Fay Scholarship of \$1,000, founded by the late Eliza A. Fay, of Boston, Mass.

A Scholarship of \$1,000 given by Mr. William F. Richards of Colorado Springs, through the Woman's Educational Society of Colorado Springs.

The Willard B. Perkins Scholarship of \$7,000. The second Willard B. Perkins Scholarship of \$7,000. These two scholarships were given by the late Willard B. Perkins, of Colorado Springs.

The Hawley Scholarship Fund of the Woman's Educational Society, now amounting to about \$10,000, founded by the will of Mrs. Mary R. Hawley, of Baltimore, Md., the annual income of which is used in the payment of scholarships of such young women of the College as the Faculty may recommend, preference being given to daughters of home and foreign missionaries.*

The Hawley Scholarship Fund of Colorado College, now amounting to about \$9,000, founded by the will of Mrs. Mary R. Hawley, of Baltimore, Md., the annual income of which is used in the payment of scholarships for such students of the College as the Faculty may recommend who may be fitting themselves for distinctively Christian work.*

The Hawley Memorial Fund, now amounting to about \$9,000, founded by the will of Mrs. Mary R. Hawley, of Baltimore, Md., in memory of her husband, Mr. Martin Hawley, the annual income of which is loaned to "worthy and deserving students of the College, as the Faculty may see proper."

The Strettell Memorial Fund of \$2,000, given by Mrs. Alma G. V. Harrison, of London, England, and General William J. Palmer, of Colorado Springs, in memory of Mr. Arthur E. V. Strettell, Mrs. Harrison's brother, who died in Colorado Springs in 1882. The income of this fund is to be used to aid students suffering from lung troubles.

The Mary G. Slocum Scholarship of \$100 a year, given by the Woman's Educational Society of Colorado College. This scholarship is awarded on the basis of competition to young men of the Junior Class.

*Students who desire to have their names considered, must make application.

The Ruth Danforth Scholarship of \$1,000, established by Mrs. Emma Danforth Wiley, of Colorado Springs.

The Elizabeth C. McAllister Scholarship of \$1,000, established by members of her family.

Several other scholarships are supported by annual subscriptions.

SELF-SUPPORT.—Advanced students of high standing have occasional opportunities for private teaching. Capable and faithful young men can usually find work in town. During the present year the Employment Bureau of the College Y. M. C. A. has secured about 250 positions for students. A limited amount of service in Bemis Hall is offered to young women; this is not often available for first-year students.

PRIZES.

The Hastings Prizes.—The sum of \$1,000 has been given by Mr. Frederic R. Hastings, of Colorado Springs, the income of which is to be used in providing prizes for sufficiently creditable theses produced by students in Philosophy 13.

THE WOMAN'S EDUCATIONAL SOCIETY.

This Society was formed in April, 1889, by the women of Colorado Springs. Its purpose, as expressed in its constitution, "is to give physical, intellectual, and spiritual aid to students in any department of Colorado College." This Society built Montgomery Hall, furnished Ticknor and McGregor Halls, and has been of service in many ways to the College. It endeavors to help the members of the Faculty in their personal work for students, especially those who are self-supporting.

First.—Loans may be made to students who have been in the College for one half-year and are recommended by the Faculty as in every way deserving of such aid.

Second.—No student shall be allowed to incur an indebtedness to the Society of more than \$300.00.

Third.—Students may receive loans without interest until their connection with the College ceases; after that time their notes shall draw interest at 4 per cent.

For the scholarships within the gift of the Society, see p. 129.

The officers for the current year are:

President—Mrs. William F. Slocum.

First Vice-President—Mrs. M. C. Gile.

Second Vice-President—Mrs. F. E. Brooks.

Third Vice-President—Mrs. L. J. Skelton.

Recording Secretary—Miss Marianna Brown.

Corresponding Secretary—Mrs. E. C. Hills.

Treasurer—Mrs. Edward S. Parsons.

Auditor—Willis R. Armstrong.

HOSPITAL FUND.

The Trustees of the Bellevue Sanitarium have given to the College nearly \$4,000 as the nucleus of a hospital fund for the students.

THE NEEDS OF THE COLLEGE.

Colorado College, never more truly than today, has great and pressing needs. Its growth during the last fifteen years has been steady and rapid, and its friends have generously assisted in helping to meet its constantly enlarging opportunity. If it is to do the work which legitimately belongs to it and have its part in meeting the educational demands of the great section of the country in which it is located, if it is to provide a thorough and broad training under positive Christian influences for those who are coming to it in constantly increasing numbers, not only from Colorado, but from the entire country, it must have in the immediate future larger resources than those upon which it has been obliged to rely during the last few years.

Among the pressing needs are the following:

General Endowment.—For the last ten years the College has been doing a work equal in amount and quality to that done by older eastern institutions possessing a much larger endowment. In consequence each year a deficit has had to be faced. A much larger sum than it has at present must be provided if the College is to go forward to fill its place in the educational life of the country.

Professorships.—It is hoped that one form in which this larger endowment will be bestowed is in the provision of permanent funds for individual professorships.

Funds for the Library.—The library has only a few hundred dollars of permanent funds. It must rely for increase upon gifts and upon purchases made out of current expense funds to meet the absolute requirements of the different departments. There is an imperative need for money to be used at once in the filling of gaps in the material the library already possesses, and also for permanent funds from which additions may be regularly made in accordance with the varied intellectual needs of the College.

Special Funds for Scientific Research.—Money to be devoted to scientific work in special lines is very greatly needed. The opportunities of Colorado College in this direction are unusual, because of the geographical, meteorological, and geological situation. The attention of those interested in the advancement of science is earnestly called to this fact.

Funds for the Department of Engineering.—This department of the College needs a considerable sum of money to be immediately expended in the proper development of its work, and also a large endowment fund to secure its stability and future growth. Large gifts bestowed for these ends will directly aid in the development of the rich resources of Colorado and the adjoining mountain states.

Scholarships.—The Trustees desire to emphasize the fact that many young people in a new country are obliged to earn their education by hard and self-denying work. Colorado College still needs a large addition to her scholarship funds. Money thus applied tends directly to the profit of the individual and of the country.

Fellowships.—It would be of great value in developing higher standards of scholarship if several graduate fellowships in various departments could be established.

Infirmary.—The Infirmary in Ticknor Hall, which is available for young women only, is inadequate to the growing needs of the College. There should be provided a separate building, in which contagious diseases can be cared for, as well as ordinary cases of illness. A fund has been started for the endowment of a cot, for use in case of illness among students who are working their way. Additions to this fund are an urgent need.

FORMS OF BEQUEST.

Those who intend to devise property to Colorado College, or to the Woman's Educational Society, are requested to employ one of the following Forms of Bequest:

"I hereby give, devise, and bequeath, unto The Colorado College of Colorado Springs, Colorado, the sum of Dollars."

"I hereby give, devise, and bequeath unto the Woman's Educational Society of Colorado College, of Colorado Springs, Colorado, the sum of Dollars."

If property other than money is willed, the form should be correspondingly varied.

Commencement, 1914

Award of Honors

HIGH HONORS.

May Louise Greene, '14.	Lois Steuerwald, '16.
Elbert Staughton Wade, '15.	Ruth Graham Collins, '17.
Florence Angela Youngman, '15.	Myriam Christy Garrett, '17.
Frank Edward Evans, '16.	Charles Edgar Taylor, '17.
Charlotte Touzalin, '17.	

HONORS.

Frances Helen Adams, '14.	William Chenault Argo, '15.
Reginald Myers Atwater, '14.	Beatrice M. Berwick, '15.
Sarah Blakeley Ingersoll, '14.	Helen Bourquin, '15.
Minna Ernestine Jewell, '14.	Lillian Blaine Catren, '15.
Percy Laban Jones, '14.	Harold Thayer Davis, '15.
Frederic Putnam Storke, '14.	Marjorie May Snyder, '15.
Ruth Catherine Wood, '14.	William Ralph Smythe, '16.
Raymond Waldron Maxwell, '16.	

Award of Scholarships

PERKINS SCHOLARS.

Bertha Merea Pick, '16.	Frank Edward Evans, '16.
William Ralph Smythe, '16.	

MARY G. SLOCUM SCHOLAR.

Harold Thayer Davis, '15.

Award of Prizes

SWEET ORATORICAL PRIZE.

- 1st Prize—Harold Thayer Davis, '15.
2nd Prize—Karle Forest Weller, '14.

PHI BETA KAPPA ELECTIONS.

CLASSES OF 1914 AND 1915.

Frances Helen Adams, '14.	Mabel Margaret Harlan, '14.
Reginald Myers Atwater, '14.	Sarah Blakeley Ingersoll, '14.
Pearl May Brennicke, '15.	Sara Judith Jacobs, '14.
Harold Thayer Davis, '15.	Martha Elizabeth Phillips, '14.
May Louise Greene, '14.	Elizabeth Chase Sutton, '14.
Ruth Catherine Wood, '14.	

Degrees Conferred, Commencement, 1914

DEGREES IN COURSE.

MASTER OF ARTS.

Clark, Guy Wendell

Havens, Leon Clive
Sisco, Dwight Lewis

BACHELOR OF ARTS.

Magna Cum Laude.

May Louise Greene.

Everett Banfield Jackson.

Sarah Blakeley Ingersoll.

Frederic Putnam Storke.

Elizabeth Chase Sutton.

Cum Laude.

Frances Helen Adams.

Rofena M. Lewis.

Mary Feimster Adams.

Leila Belle McReynolds.

Reginald Myers Atwater.

Martha Elizabeth Phillips.

Harriet Gates.

Edith Antonetta Powell.

Edgar Haddon Gum.

Arthur Fisher Rose.

Mabel Margaret Harlan.

Elizabeth Delphine Schmitt.

Sara Judith Jacobs.

Ruth Foxworthy Sheppard.

Minna Ernestine Jewell.

Maude Elizabeth Stanfield.

Percy Laban Jones.

Ruth Catherine Wood.

Alexander, Margaret

Griffith, Maude May

Allen, Arthur Jones

Harter, Charles Arthur

Anderson, Charlotta

Holm, Dagmar Marguerite

Anson, Irene

Kim, Frank Yongju

Ball, Grace Elizabeth

Knous, Florence Elizabeth

Barnes, Ernest Winfred

Koch, Edward Harry

Berryhill, Robert Hamilton

Landon, Mary Emily

Cajori, Florian Anton

Lennox, Agnes

Carson, Anne Bryan

Leonard, Maude Webster

Cassidy, Helen Margaret

Lewis, Raymond

Chamberlin, Louise

McCaffery, Ellen Cecelia

Clark, Leon Benjamin

McCreery, Dorothy

Copeland, George Holliday

Madden, Dorothy Winifred

Copeland, Katherine Earl

Miller, Raymond Edward

DeRusha, Helen Emma

Moye, Ralph Albert

Dilts, Lucile Winifred

Mullaney, Frances Josephine

Dupertuis, Jean

Park, Nelson Renfrew

Fukuya, Shoan Masuzo

Shelden, Jessie Marguerite

Gerlach, Frederick Matthew

Street, Claudius Augustus

Gowdy, Helen

Strieby, Maurice Edward

Gibbs, Lillian May

Townsend, Frances Helen

Gregg, Harold William

Wakefield, Lucile

Warren, Helen Frances
 Watson, Harley Albro
 Weller, Karle Forest
 Whittenberger, Gladys Mae

Willson, Mary Louise
 Wilson, James Johnston
 Woon, Mary Evelyn
 Wray, Harry Clinton

DIPLOMA IN MUSIC.

Harlan, Mabel Margaret

BACHELOR OF SCIENCE IN CIVIL ENGINEERING.

Lloyd, Robert

Rose, Roy Michael

BACHELOR OF SCIENCE IN IRRIGATION ENGINEERING.

Johnston, Charles Morton

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

McCoy, William Charles

Rose, Arthur Fisher

Students

GRADUATE STUDENTS.

NAME	HOME ADDRESS.	CITY ADDRESS.
Harry Lee Black, A.B. Colorado College, '12.	<i>Colorado Springs.</i>	School for Deaf and Blind.
Jean Dupertuis, A.B. Colorado College, '14.	<i>Colorado Springs.</i>	1029 N. Nevada Ave.
Frederick Matthew Gerlach, A.B. Colorado College, '14.	<i>Cañon City, Colo.</i>	Hagerman Hall.
May Louise Greene, A.B. Colorado College, '14.	<i>Colorado Springs.</i>	411 E. Columbia St.
Harold William Gregg, A.B. Colorado College, '14.	<i>Longmont, Colo.</i>	1106 N. Weber St.
Faith Huntington Haines, A.B. Colorado College, '09.	<i>Colorado Springs.</i>	1506 N. Tejon St.
Helen Jackson, A.B. Vassar, '12.	<i>Colorado Springs.</i>	228 E. Kiowa St.
Charles Simonton McCain, A.B., Yale, '04	<i>Little Rock, Ark.</i>	Cragmoor.
Charles Edwards Parsons, A.B. Amherst, '13.	<i>Colorado Springs.</i>	1130 Wood Ave.

SENIORS.

Adams, Clarence Morrison	<i>Steamboat Springs.</i>	Hagerman Hall.
Argo, William Chenault	<i>Colorado Springs.</i>	School for Deaf and Blind.
Armstrong, Dorothy Margaret	<i>Ft. Collins, Colo.</i>	Bemis Hall.
Bartlett, Agnes Griswold	<i>Colorado Springs.</i>	2220 N. Nevada Ave.
Bates, Emma Ruth	<i>Colorado Springs.</i>	22 N. 13th St.
Berwick, Beatrice Marion	<i>Colorado Springs.</i>	429 S. Nevada Ave.
Border, Chauncy Abraham	<i>Strasburg, Ohio.</i>	Hagerman Hall.
Bourquin, Helen	<i>Colorado Springs.</i>	926 N. Wahsatch Ave.
Bower, Marie	<i>Guthrie Center, Ia.</i>	2012 N. Tejon St.
Brennicke, Pearl May	<i>Colorado Springs.</i>	Bemis Hall.
Brewer, Edyth Lillian	<i>Manzanola, Colo.</i>	Bemis Hall.
Brooks, Eva	<i>Brookston, Colo.</i>	Bemis Hall.
Brown, Olive	<i>Westfield, Ind.</i>	Bemis Hall.
Brunner, Henry Harris (E)	<i>Colorado Springs.</i>	112 S. 17th St.
Carley, Maurine Osa	<i>Cheyenne, Wyo.</i>	Bemis Hall.
Catren, Lillian	<i>Georgetown, Colo.</i>	Bemis Hall.
Crampton, John Heugh (E)	<i>Colorado Springs.</i>	1614 N. Tejon St.
Crutcher, Hester Brandenburg	<i>Salida, Colo.</i>	Bemis Hall.
Davis, Harold Thayer	<i>Colorado Springs.</i>	21 E. Caramillo St.
Daw, Arthur Henry (E)	<i>Colorado City, Colo.</i>	915 Jefferson Ave.
Dennis, George Wesley	<i>Loveland, Colo.</i>	1122 N. Cascade Ave.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Emery, Charles Francis	<i>Colorado Springs.</i>	1420 N. Nevada Ave.
Erikson, Statie Estelle	<i>Ouray, Colo.</i>	Bemis Hall.
Ferril, Harriet Peckham	<i>Denver, Colo.</i>	Bemis Hall.
Forsee, Eleanor Elizabeth	<i>Kutch, Colo.</i>	Bemis Hall.
Gardner, Helen	<i>Kirksville, Mo.</i>	Bemis Hall.
Gethmann, Mary Mabel	<i>Oklahoma City.</i>	Ticknor Hall.
Grimsley, Richard Elmo	<i>Lexington, Ill.</i>	1122 N. Cascade Ave.
Hall, James Smith	<i>Hollister, Idaho.</i>	1106 N. Weber St.
Hall, Ralph Lyman (F)	<i>Denver, Colo.</i>	1122 N. Cascade Ave.
Hemenway, Florence Louise	<i>Colorado Springs.</i>	315 N. 4th St.
Hopkins, Guy Huskinson	<i>Grand Junction.</i>	1106 N. Weber St.
Jeanne, Paul Andrew (E)	<i>Colorado Springs.</i>	301 Cheyenne Blvd.
Johnson, Blanche Juliet	<i>Marne, Iowa.</i>	1820 N. Tejon St.
Kampf, Frederick William	<i>Colorado Springs.</i>	1516 N. Tejon St.
Kelsey, Ruth Marie	<i>Sterling, Colo.</i>	Bemis Hall.
Knutzen, Marguerite	<i>Alamosa, Colo.</i>	Bemis Hall.
McReynolds, Edna Earl	<i>Rutledge, Mo.</i>	1532 N. Nevada Ave.
Mason, Alice Darling	<i>Greeley, Colo.</i>	Bemis Hall.
Miller, Clinton Van Giesen (E)	<i>Colorado Springs.</i>	1319 N. Nevada Ave.
Ormes, Jean Harriet	<i>Colorado Springs.</i>	1623 N. Tejon St.
Roberts, Llewellyn D.	<i>Springfield, Ky.</i>	Bemis Hall.
Sasano, Kakutaro Thomas	<i>Okayama, Japan.</i>	24 College Place.
Sawhill, Ray	<i>Winterset, Iowa.</i>	427 N. Weber St.
Schuyler, Cornelia Elizabeth	<i>Denver, Colo.</i>	Bemis Hall.
Snyder, Marjorie May	<i>Colorado Springs.</i>	1303 N. Wahsatch Av.
Strawn, Bernadine	<i>Albion, Ill.</i>	Bemis Hall.
Stuntz, Edna Matilda	<i>Colorado City, Colo.</i>	231 Jefferson Ave.
Sumner, Mary Beatrice.	<i>Colorado Springs.</i>	230 E. Yampa St.
Taylor, Milford Edson	<i>Colorado City, Colo.</i>	429 Lincoln Ave.
Tweedy, Ira Otis	<i>Colorado Springs.</i>	508 S. El Paso St.
Van Stone, Wilfred	<i>Colorado Springs.</i>	1125 N. Nevada Ave.
Wade, Elbert Staughton	<i>Duluth, Minn.</i>	1319 N. Nevada Ave.
Wallace, Ruth Margaret	<i>Denver, Colo.</i>	Bemis Hall.
Wilkin, Dorothy	<i>Cañon City, Colo.</i>	Bemis Hall.
Williams, Judson Thomas	<i>Colorado Springs.</i>	1122 N. Cascade Ave.
Youngman, Florence Angela	<i>Cañon City, Colo.</i>	Bemis Hall.
Zirkle, Mina Belle	<i>Denver, Colo.</i>	Bemis Hall.

JUNIORS.

Allward, Charlotte Pearson	<i>Colorado Springs.</i>	218 E. St. Vrain St.
Anderson, Frederick George (E)	<i>Colorado Springs.</i>	503 E. Bijou St.
Balch, Harry Hughes	<i>Greeley, Colo.</i>	1125 N. Nevada Ave.
Bancroft, Bertha May	<i>Marshall, Minn.</i>	1117 N. Hancock Ave.
Barnett, Margaret	<i>Denver, Colo.</i>	McGregor Hall.
Barney, Martin Davis	<i>Colorado Springs.</i>	1828 N. Nevada Ave.
Bartlett, Harriet Morgan	<i>Colorado Springs.</i>	2220 N. Nevada Ave.
Becker, Bernard Carl	<i>Belen, N. M.</i>	1106 N. Weber St.
Bennett, Hila	<i>Colorado Springs.</i>	301 N. Walnut St.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Bowman, Bernice Olive	<i>Colorado Springs.</i>	1512 N. Nevada Ave.
Boyd, Helen Shelley	<i>Colorado Springs.</i>	1220 N. Tejon St.
Brooks, Hattie Estella	<i>Colorado Springs.</i>	1820 Washington Ave.
Brown, Robert John	<i>Evanston, Ill.</i>	911 N. Nevada Ave.
Caldwell, Herschel Lyal	<i>Green Ridge, Mo.</i>	Hagerman Hall.
Cheley, Glen Evan	<i>Colorado Springs.</i>	424 S. Tejon St.
Coltrin, Charles Wesley	<i>Franklin, Neb.</i>	218 E. Willamette Ave.
Conrad, Mary Salome	<i>Colorado Springs.</i>	117 E. Espanola St.
Crissey, Marjorie	<i>Colorado Springs.</i>	615 N. Cascade Ave.
Cunningham, Rachel	<i>Denver, Colo.</i>	McGregor Hall.
Dixon, John Philip	<i>Colorado Springs.</i>	2819 N. Cascade Ave.
Eaton, Elizabeth June	<i>Greeley, Colo.</i>	McGregor Hall.
Esmiol, Morris Alfred	<i>Denver, Colo.</i>	1105 N. Nevada Ave.
Estabrook, Mary Evelyn	<i>Greeley, Colo.</i>	McGregor Hall.
Evans, Frank Edward	<i>Colorado Springs.</i>	1912 N. Tejon St.
Flora, Harriette Pearl	<i>Colorado Springs.</i>	2129 N. Nevada Ave.
Fuller, Lillian Eliza	<i>Colorado Springs.</i>	1429 N. Weber St.
Gault, Elva	<i>Pueblo, Colo.</i>	Ticknor Hall.
Geissler, Anna Louise	<i>Colorado Springs.</i>	233 N. Franklin St.
Graves, Cecil Henry	<i>Colorado Springs.</i>	1222 Lincoln Ave.
Greenlee, Lawrence Albert	<i>Colorado Springs.</i>	1106 N. Weber St.
Hadley, Edna Margaret	<i>Colorado City, Colo.</i>	112 Colorado Ave.
Hall, Frank Herbert	<i>Monett, Mo.</i>	1106 N. Weber St.
Hallock, Rachel Maryette	<i>Denver, Colo.</i>	McGregor Hall.
Hamilton, Edith Magill	<i>Cañon City, Colo.</i>	Bemis Hall.
Harrison, Charles Allison	<i>Colorado Springs.</i>	823 E. Boulder St.
Heald, Helen	<i>Denver, Colo.</i>	McGregor Hall.
Henderson, Isabel Corbin	<i>Sterling, Colo.</i>	Ticknor Hall.
Higgins, Ruth	<i>Pueblo, Colo.</i>	McGregor Hall.
Holm, Agnes Marie	<i>Amo, Colo.</i>	1121 N. Tejon St.
Howland, Wendell Barker (E)	<i>Denver, Colo.</i>	9 E. Dale St.
Hubbell, Elizabeth Guion	<i>Colorado Springs.</i>	1915 Wood Ave.
Hyde, James Francis Clark (E)	<i>Nashville, Tenn.</i>	Hagerman Hall.
Jewell, Lucy	<i>Colorado Springs.</i>	Ticknor Hall.
Johnson, Elva Caroline	<i>Colorado Springs.</i>	331 E. Willamette Ave.
Keith, Millard O'Brien	<i>Stephenville, Tex.</i>	Hagerman Hall.
Kirkwood, Helen Grace	<i>Colorado Springs.</i>	1409 S. Nevada Ave.
Kramer, Harry Stillman (E)	<i>Las Animas, Colo.</i>	1122 N. Cascade Ave.
Lee, Gale Auten	<i>Lamar, Colo.</i>	1106 N. Weber St.
Leipheimer, Helen L	<i>Colorado Springs.</i>	629 N. Weber St.
Lewis, Inez Johnson	<i>Colorado Springs.</i>	1825 Cheyenne Blvd.
Long, Mildred	<i>Denver, Colo.</i>	Ticknor Hall.
McCammon, Floyd Franklin (E)	<i>Colorado Springs.</i>	14 S. 18th St.
McCoy, Linda	<i>Colorado Springs.</i>	521 S. Tejon St.
McNeil, Frederick Brainard	<i>Shawnee, Okla.</i>	911 N. Nevada Ave.
Morse, Levi Parminter	<i>Grand Junction.</i>	1106 N. Weber St.
Munro, Edward Everett Hale	<i>Columbus, Neb.</i>	1106 N. Weber St.
Nelson, Robert Ruthertford	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Neuswanger, Peter Christopher	<i>Greeley, Colo.</i>	1122 N. Cascade Ave.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Pick, Bertha Merea	<i>Colorado Springs.</i>	914 Cheyenne Road.
Pollock, Milton Wayne (E)	<i>Colorado Springs.</i>	1908 Colorado Ave.
Pooler, Dorothy Hazel	<i>Austin, Minn.</i>	Ticknor Hall.
Powell, Arthur Lester (E)	<i>Cañon City, Colo.</i>	1210 Wood Ave.
Ransdell, Hollace Vivian	<i>Colorado Springs.</i>	813 N. Wahsatch Ave.
Ritteman, Chloie	<i>Hawley, Minn.</i>	501 E. Boulder St.
Ritteman, Ralph W.	<i>Hawley, Minn.</i>	501 E. Boulder St.
Roberts, Ivor Simpson	<i>Springfield, Ky.</i>	1122 N. Cascade Ave.
Robinson, George De Witt	<i>Colorado Springs.</i>	124 E. Dale St.
Ross, Willard Cherrington	<i>Grand Junction.</i>	1319 N. Nevada Ave.
Savage, Laura Ada	<i>Great Falls, Mont.</i>	McGregor Hall.
Savage, Lucy Eunice	<i>Great Falls, Mont.</i>	Ticknor Hall.
Seeley, Charles Kingery	<i>La Junta, Colo.</i>	Hagerman Hall.
Smith, Lois Elizabeth	<i>Denver, Colo.</i>	Ticknor Hall.
Smythe, William Ralph	<i>Colorado Springs.</i>	1219 N. Wahsatch Ave.
Sprengle, Eva May	<i>Pueblo, Colo.</i>	Ticknor Hall.
Stanard, Margaret Emily	<i>Pueblo, Colo.</i>	McGregor Hall.
Steuerwald, Lois	<i>Longmont, Colo.</i>	McGregor Hall.
Stocks, Joseph Wendell	<i>Denver, Colo.</i>	108 E. Boulder St.
Sweetser, Mary Louise	<i>Colorado Springs.</i>	1729 N. Corona St.
Turner, Merrill Henry	<i>Eaton, Colo.</i>	1122 N. Cascade Ave.
Van Diest, Alice Elfrieda	<i>Colorado Springs.</i>	719 N. Nevada Ave.
Walker, Prudence May	<i>Grand Junction.</i>	McGregor Hall.
White, Lavina Belle	<i>Pueblo, Colo.</i>	Ticknor Hall.
Young, Gladys	<i>Colorado Springs.</i>	320 E. Boulder St.

SOPHOMORES.

Abrams, Nellie Esther	<i>Colorado Springs.</i>	28 E. Dale St.
Aylard, Margaret Helen	<i>Colorado Springs.</i>	1208 N. Weber St.
Bailey, Edythe Eleanor	<i>Pueblo, Colo.</i>	McGregor Hall
Bass, Wood	<i>El Dorado, Kans.</i>	218 E. Dale St.
Beery, Joseph Homer	<i>Paola, Kans.</i>	112 E. Dale St.
Belk, Dorothea	<i>Pueblo, Colo.</i>	McGregor Hall.
Bispham, Miriam Freeman	<i>Colorado Springs.</i>	2111 N. Nevada Ave.
Bourk, Edna Marie	<i>Colorado Springs.</i>	512 E. Cache la Poudre
Bowers, Hazel	<i>Colorado Springs.</i>	2008 N. Nevada Ave.
Boyd, Edith	<i>Colorado Springs.</i>	1220 N. Tejon St.
Bradley, Ruth Elizabeth	<i>Colorado Springs.</i>	430 W. Pikes Peak Av.
Briscoe, John Lee	<i>Castle Rock, Colo.</i>	Hagerman Hall.
Brooks, Adin Paul	<i>Colorado Springs.</i>	1820 Washington Ave.
Bryson, Florence June	<i>Pueblo, Colo.</i>	Montgomery Hall.
Caldwell, Blanche Edna	<i>Hastings, Neb.</i>	Ticknor Hall.
Caldwell, Helen Elizabeth	<i>Brookings, S. D.</i>	McGregor Hall.
Carlson, Georgia May	<i>Denver, Colo.</i>	McGregor Hall.
Carnahan, Mary Kathryn	<i>Rico, Colo.</i>	McGregor Hall.
Carrick, Mattie	<i>Colorado Springs.</i>	1430 N. Weber St.
Christy, William Glen	<i>Eureka, Kans.</i>	1319 N. Nevada Ave.
Clemans, Martha Elizabeth	<i>Colorado Springs.</i>	17 E. Dale St.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Clifford, Paul Henry	<i>Rockville, Conn.</i>	Manitou, Colo.
Collins, Ruth Graham	<i>Colorado Springs.</i>	McGregor Hall.
Cover, Lee Hulbert	<i>Rocky Ford, Colo.</i>	1122 N. Cascade Ave.
Craise, Marguerite Elizabeth	<i>Denver, Colo.</i>	McGregor Hall.
Culp, Hamer	<i>Rocky Ford, Colo.</i>	1122 N. Cascade Ave.
Cunningham, Agnes Blanche	<i>Denver, Colo.</i>	McGregor Hall.
Davis, Gladys Marshall	<i>Sterling, Colo.</i>	McGregor Hall.
Davis, William Mack	<i>Monte Vista, Colo.</i>	Hagerman Hall.
Dawson, Ruth Elizabeth	<i>Denver, Colo.</i>	McGregor Hall.
Dockstader, Henry Peter (E)	<i>Colorado Springs.</i>	1316 N. Nevada Ave.
Dodds, Winnifred	<i>Colorado Springs.</i>	511 E. Cache la Poudre
Donaldson, Irene Brownlee	<i>Denver, Colo.</i>	Montgomery Hall.
Dudley, Donald Ashworth (E)	<i>Colorado Springs.</i>	14 Cheyenne Rd.
Durbin, Helen Avery	<i>Denver, Colo.</i>	Montgomery Hall.
Elliott, Cleona Eva	<i>Cañon City, Colo.</i>	Montgomery Hall.
England, Stephen Jackson, Jr.	<i>Salida, Colo.</i>	1339 N. Nevada Ave.
Eubank, Myron Lee	<i>Colorado Springs.</i>	1410 N. Weber St.
Faulkner, James Edmund (E)	<i>Colorado City, Colo.</i>	631 Colorado Ave.
Frickey, Edwin	<i>Brush, Colo.</i>	1303 N. Tejon St.
Gardner, Hugh	<i>Cascade, Colo.</i>	Plaza Hotel.
Garnett, Anna Maud	<i>Pueblo, Colo.</i>	McGregor Hall.
Garrett, Myriam Christy	<i>Colorado Springs.</i>	710 N. Cascade Ave.
Garside, Ben Charles, Jr.	<i>Denver, Colo.</i>	1125 N. Nevada Ave.
Glezen, Lee Louis (E)	<i>Colorado Springs.</i>	727 N. Wahsatch Ave.
Graham, Margery	<i>Pueblo, Colo.</i>	McGregor Hall.
Hamilton, Sara Grace	<i>Colorado Springs.</i>	315 E. Willamette Ave.
Harbison, Edith Estelle	<i>Denver, Colo.</i>	McGregor Hall.
Harris, Marea Vaughan	<i>New Castle, Colo.</i>	Montgomery Hall.
Harrison, Hazel Dawn	<i>Goldfield, Colo.</i>	McGregor Hall.
Hassell, Julia Frances	<i>Colorado Springs.</i>	1424 Wood Ave.
Hazen, Frank De Forrest (E)	<i>Hamilton, Ill.</i>	911 N. Nevada Ave.
Heald, Edward Clifford	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Heimbecher, Louis	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Henn, Samuel Chester	<i>Paonia, Colo.</i>	1106 N. Weber St.
Hensley, Elinor	<i>Denver, Colo.</i>	Montgomery Hall.
Hensley, Mary Olive	<i>Denver, Colo.</i>	McGregor Hall.
Herron, John Lawrence	<i>Aspen, Colo.</i>	911 N. Nevada Ave.
Hill, Mary Kearney	<i>Great Bend, Kans.</i>	Montgomery Hall.
Holman, Newton Davis	<i>Colorado Springs.</i>	425 St. Vrain St.
Hunt, Winifred Belle	<i>Denver, Colo.</i>	McGregor Hall.
Huston, Harold	<i>Manzanola, Colo.</i>	114 N. Weber St.
Hutchison, Homer Ross	<i>Colorado Springs.</i>	732 N. Wahsatch Ave.
Hutchison, Mary Elizabeth	<i>Colorado Springs.</i>	732 N. Wahsatch Ave.
Inghram, William	<i>Omaha, Neb.</i>	530 N. Nevada Ave.
Jacobs, Anna	<i>Des Moines, Iowa.</i>	Montgomery Hall.
Jenkins, Ned Walter	<i>Mansfield, La.</i>	911 N. Nevada Ave.
Jones, Mildred Ankeny	<i>Ottawa, Kans.</i>	McGregor Hall.
Joslin, Doyle	<i>Colorado Springs.</i>	530 E. Platte Ave.
June, Perry Ellsworth	<i>Colorado Springs.</i>	1024 N. Corona St.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Kapitzky, Ruth	<i>Strasburg, Ohio.</i>	Montgomery Hall.
Keating, Kathrine	<i>Pueblo, Colo.</i>	McGregor Hall.
Keener, George Herring	<i>Colorado Springs.</i>	426 E. Cache la Poudre
Keeth, Frances	<i>Colorado Springs.</i>	308 E. Platte Ave.
King, Bertha	<i>Grinnell, Iowa.</i>	Ticknor Hall.
Kutzleb, Charles Albert	<i>Cañon City, Colo.</i>	930 N. Spruce St.
Lennox, Helen Virginia	<i>Colorado Springs.</i>	1339 N. Nevada Ave.
Lieberknecht, Scott Lewis	<i>Letts, Iowa.</i>	1319 N. Nevada Ave.
Liljestrom, George William (E)	<i>Pueblo, Colo.</i>	1125 N. Nevada Ave.
Lisenby, Ruby	<i>Colorado Springs.</i>	409 Olive St.
Mackay, Anne Louise	<i>Denver, Colo.</i>	McGregor Hall.
McKesson, William Bryan	<i>Colorado Springs.</i>	1215 Colorado Ave.
Mann, Wilbur Reece	<i>Tabor, Iowa.</i>	911 N. Nevada Ave.
Martin, Earl Gilbert (E)	<i>Colorado Springs.</i>	505 N. 8th St.
Martin, Gladys Marian	<i>Colorado Springs.</i>	1411 S. Tejon St.
Mason, Edith Parsons	<i>Colorado Springs.</i>	619 N. Prospect St.
Maxwell, Raymond Waldron	<i>Colorado Springs.</i>	1517 N. Weber St.
Merrill, Howard Glen	<i>Grand Junction.</i>	1319 N. Nevada Ave.
Merrill, Madre	<i>Colorado Springs.</i>	226 E. Monument St.
Meyer, Grace Rosetta	<i>Colorado Springs.</i>	Montgomery Hall.
Mimmack, Rufus Frederick	<i>Eaton, Colo.</i>	1125 N. Nevada Ave.
Mimmack, William Edward	<i>Eaton, Colo.</i>	1125 N. Nevada Ave.
Morrow, Walter Thomas (E)	<i>Colorado Springs.</i>	Broadmoor.
Moseley, Helen Fern	<i>Pueblo, Colo.</i>	McGregor Hall.
Mullen, Florence Carol	<i>Colorado Springs.</i>	127 E. Las Animas St
Neff, Kinzie Benewell	<i>Delta, Colo.</i>	Plaza Hotel.
Nicholson, Helen Louise	<i>Colorado Springs.</i>	110 S. Wahsatch Ave.
Nowels, Kenneth Busey	<i>Colorado Springs.</i>	721 W. Cucharas St.
Owen, Leonard Joseph	<i>Colorado Springs.</i>	444 N. Walnut St.
Padou, Mary Harriet	<i>Indianapolis, Ind.</i>	322 E. San Miguel St.
Paulson, Paul Alvin	<i>Basin, Wyo.</i>	Hagerman Hall.
Pendergast, Mary Honora	<i>Colorado Springs.</i>	220 E. Monument St.
Perryman, Lora Arabelle	<i>Colorado Springs.</i>	423 E. Yampa St.
Puntenney, Harriet Elizabeth	<i>Pueblo, Colo.</i>	McGregor Hall.
Ragle, William Floyd	<i>Salina, Kans.</i>	1722 N. Royer St.
Randolph, Jay (E)	<i>Colorado Springs.</i>	103 N. Spruce St.
Rawlings, John William	<i>Monte Vista, Colo.</i>	1122 N. Cascade Ave.
Reed, Cecil David (E)	<i>Colorado Springs.</i>	111 E. San Miguel St.
Richardson, Irma Maude	<i>Cañon City, Colo.</i>	Montgomery Hall.
Sager, Henry	<i>Custer, S. D.</i>	117 N. Nevada Ave.
Schlessman, Gerald Lee	<i>Colorado Springs.</i>	314 N. 1st St., Nob Hill.
Shadowen, Carl Albert	<i>Ft. Morgan, Colo.</i>	1106 N. Weber St.
Shadowen, Ethel May	<i>Ft. Morgan, Colo.</i>	McGregor Hall.
Shaffer, Washington Irving	<i>Stephenville, Tex.</i>	Hagerman Hall.
Sheldon, Alan Bancroft	<i>Kansas City, Mo.</i>	Hagerman Hall.
Slack, Arthur Benjamin	<i>Lazaer, Colo.</i>	1125 N. Nevada Ave.
Spalding, John William (E)	<i>La Junta, Colo.</i>	1122 N. Cascade Ave.
Steele, Robert Borden	<i>Rocky Ford, Colo.</i>	1123 N. Weber St.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Stewart, Thomas Leidigh	<i>Spearville, Kans.</i>	1319 N. Nevada Ave.
Stone, Geraldine	<i>Colorado Springs.</i>	726 N. Weber St.
Strain, Frank Elven	<i>Lamar, Colo.</i>	1122 N. Cascade Ave.
Stubbs, Maurice Garver	<i>La Junta, Colo.</i>	1122 N. Cascade Ave.
Sumner, John Robert Carew	<i>Colorado Springs.</i>	230 E. Yampa St.
Tamayo, Fernando Carlos (E)	<i>San Cristobal, Tachira, Venezuela</i>	Hagerman Hall.
Taylor, Charles Chauncey (E)	<i>Colorado Springs.</i>	1526 Hayes St.
Taylor, Charles Edgar	<i>Colorado Springs.</i>	225 E. Jefferson St.
Taylor, Clarion Wells	<i>Colorado City, Colo.</i>	422 Lincoln Ave.
Taylor, Theron Jack	<i>Colorado Springs.</i>	1230 Glen Ave.
Titler, Floyd John (E)	<i>Longmont, Colo.</i>	112 E. Dale St.
Totten, Helen	<i>Haddam, Kans.</i>	725 N. Cascade Ave.
Touzalin, Charlotte	<i>Colorado Springs.</i>	1117 N. Nevada Ave.
Van Diest, Annette Josine	<i>Colorado Springs.</i>	719 N. Nevada Ave.
Vickers, Denver	<i>Colorado Springs.</i>	419 N. Wahsatch Ave.
Vorrath, Adele Frederica	<i>Colorado Springs.</i>	219 E. Fontanero St.
Walker, Bertha	<i>Grand Junction.</i>	McGregor Hall.
Wallrich, Florence Edna	<i>Alamogosa, Colo.</i>	McGregor Hall.
Walsh, Winnifred Isabel	<i>Denver, Colo.</i>	Montgomery Hall.
Waples, Dorothy	<i>Cody, Wyo.</i>	McGregor Hall.
Waterhouse, Georgiana	<i>Weiser, Idaho.</i>	McGregor Hall.
Watson, Elmo Scott	<i>Colfax, Ill.</i>	1106 N. Weber St.
Weber, Glenn (E)	<i>Colorado Springs.</i>	234 Franklin St.
Welles, Miriam	<i>Grand Junction.</i>	McGregor Hall.
Weston, Sylvia Gwendoline	<i>Colorado Springs.</i>	1112 E. Pikes Peak Av.
Whipple, Marjory Helen	<i>Cheyenne, Wyo.</i>	McGregor Hall.
Whitney, Leo John	<i>Cascade, Colo.</i>	Plaza Hotel.
Wickham, Esther Lionne	<i>Denver, Colo.</i>	McGregor Hall.
Williams, Edward	<i>Walsen, Colo.</i>	1319 N. Nevada Ave.
Williams, Jessie Jeannette	<i>Tamona, Calif.</i>	Ticknor Hall.
Williams Russell Ventres (E)	<i>Idaho Springs, Colo.</i>	1319 N. Nevada Ave.
Wilson, Beulah Glee	<i>Manitou, Colo.</i>	McGregor Hall.
Winternitz, Elizabeth	<i>Colorado City, Colo.</i>	319 Colorado Ave.
Wright, Lillian	<i>Colorado Springs.</i>	1414 Lincoln Ave.
Wubben, Horace Jay	<i>Paonia, Colo.</i>	Plaza Hotel.
Yokoyama, Matsusaburo	<i>Mito, Japan.</i>	1130 Wood Ave.

FRESHMEN.

Acker, Robert	<i>Manitou, Colo.</i>	Manitou, Colo.
Adams, Carol Worthington	<i>Ft. Collins, Colo.</i>	Bemis Hall.
Alps, Bayard Garfield	<i>Loveland, Colo.</i>	928 N. Weber St.
Altum, Clarence	<i>Lebanon, Ind.</i>	1319 N. Nevada Ave.
Ambrose, Lois	<i>Ft. Morgan, Colo.</i>	Ticknor Hall.
Anderson, Eugene Linnae (E)	<i>Colorado Springs.</i>	1129 Washington Ave.
Anderson, Ruth Lillie	<i>Central City, Colo.</i>	737 E. Boulder St.
Arnold, Landis J.	<i>Colorado Springs.</i>	423 N. Wahsatch Ave.
Backus, Edna Mae	<i>Colorado Springs.</i>	21 E. Columbia St.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Baenteli, Gertrude Rosalie	<i>Denver, Colo.</i>	1228 N. Weber St.
Bailar, Sarah Frances	<i>Salida, Colo.</i>	Bemis Hall.
Baker, Sara Emma	<i>Colorado Springs.</i>	1006 E. Platte Ave.
Barber, Alma Louise	<i>Colorado Springs.</i>	507 N. Tejon St.
Beach, Mary Josephine	<i>Victor, Colo.</i>	231 Jefferson Ave., Colorado City, Colo.
Beavers, James Leslie	<i>Lamar, Colo.</i>	911 N. Nevada Ave.
Berry, Alice America	<i>Colorado Springs.</i>	436 E. St. Vrain St.
Bitting, Floy Elizabeth	<i>Sherman, Tex.</i>	Ticknor Hall.
Bothwell, John (E)	<i>Colorado Springs.</i>	1124 N. Weber St.
Bottler, Joseph Sebastian	<i>Denver, Colo.</i>	1123 N. Weber St.
Bragdon, Warren Brooks	<i>Colorado Springs.</i>	1121 N. Wahsatch Ave.
Branson, Albert Harold	<i>Trinidad, Colo.</i>	911 N. Nevada Ave.
Breder, Marie Elizabeth	<i>Colorado Springs.</i>	801 N. Nevada Ave.
Brooks, Effie Maria	<i>Brookston, Colo.</i>	1121 N. Tejon St.
Burgener, Charles Edward	<i>Loveland, Colo.</i>	Plaza Hotel.
Burgess, Louise Martin	<i>Colorado Springs.</i>	730 N. Nevada Ave.
Burlingame, Robert Miles	<i>Denver, Colo.</i>	220 N. Cascade Ave.
Burnham, Estella Bertha	<i>St. Joseph, Mo.</i>	Y. W. C. A.
Campbell, Lillian	<i>Grand Junction.</i>	Montgomery Hall.
Campbell, William Armstead	<i>Colorado Springs.</i>	424 N. Nevada Ave.
Carpenter, Helen Bowen	<i>Mancos, Colo.</i>	McGregor Hall.
Carrick, Eilene Gregory	<i>Colorado Springs.</i>	1430 N. Weber St.
Carroll, Kathleen Gardnir	<i>Colorado Springs.</i>	306 E. Bijou St.
Carroll, William Francis	<i>Colorado Springs.</i>	306 E. Bijou St.
Cheese, Naomi Celia	<i>Peyton, Colo.</i>	Ticknor Hall.
Clark, Catherine	<i>Aspen, Colo.</i>	Ticknor Hall.
Clough, Marie Catherine	<i>Colorado Springs.</i>	623 N. Tejon St.
Coffin, Dorothy Huntington	<i>Colorado Springs.</i>	620 E. Columbia St.
Coldren, Fred George	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Cook, Albert Rolland (E)	<i>Delta, Colo.</i>	Hagerman Hall.
Cook, Nell	<i>Cañon City, Colo.</i>	Ticknor Hall.
Cooper, Lysle Winston	<i>Colorado Springs.</i>	705 S. Nevada Ave.
Cox, Harriette Agnes	<i>Denver, Colo.</i>	Bemis Hall.
Crane, Dorothy Dunbar	<i>Ridgefield, Conn.</i>	Bemis Hall.
Criswell, Walter Hudson (E)	<i>Paonia, Colo.</i>	1130 N. Nevada Ave.
Davis, Chester Earl	<i>Loveland, Colo.</i>	1122 N. Cascade Ave.
Davis, Donald Watson (E)	<i>Colorado Springs.</i>	21 E. Caramillo St.
Davis, Gordon	<i>Colorado Springs.</i>	724 E. Kiowa St.
Davis, William Jennings (E)	<i>Delta, Colo.</i>	Hagerman Hall.
Davison, Elizabeth Leavitt	<i>Colorado Springs.</i>	Bemis Hall.
Dawson, Lydia	<i>Linwood, Neb.</i>	Bemis Hall.
Durkee, Alpha Louise	<i>Manitou, Colo.</i>	Manitou, Colo.
Dworak, Alfred Vance	<i>Longmont, Colo.</i>	1106 N. Weber St.
Dworak, Frances Emma	<i>Colorado Springs.</i>	1203 Grant Ave.
Eads, Perry Raymond	<i>Colorado Springs.</i>	14 E. Bijou St.
Ecke, Avis Clair	<i>Colorado Springs.</i>	112 E. Espanola St.
Edgar, Lea Blanche	<i>Colorado Springs.</i>	1210 N. Nevada Ave.
Equen, Helen Louise	<i>Columbus, Miss.</i>	Bemis Hall.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Ettinger, Carl Newman (E)	<i>Peirce City, Mo.</i>	1115 Wood Ave.
Evans, Elisebeth Nesmith	<i>Denver, Colo.</i>	Bemis Hall.
Farmer, Grace Eleanor	<i>Cañon City, Colo.</i>	McGregor Hall.
Ferril, Thomas Honsby	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Field, Mildred	<i>Colorado Springs.</i>	422 E. Willamette Av.
Flint, Pattie Hitchings	<i>Denver, Colo.</i>	Bemis Hall.
Flynn, Edmund (E)	<i>Colorado Springs.</i>	518 N. Cascade Ave.
Freeman, Marie	<i>Colorado Springs.</i>	734 E. Boulder St.
Fukushima, Iwao (E)	<i>Cheyenne, Wyo.</i>	Hagerman Hall.
Gallagher, Mary Margaret	<i>Colorado Springs.</i>	1026 Colorado Ave.
Gardner, Lillian Eloise	<i>Silverton, Colo.</i>	Ticknor Hall.
Gates, Lilian Carpenter	<i>Sapulpa, Okla.</i>	Bemis Hall.
Geiser, Claude William	<i>Monte Vista, Colo.</i>	1106 N. Weber St.
Gill, Rose Miriam	<i>Vinita, Okla.</i>	McGregor Hall.
Gilliland, Harold Edward	<i>La Junta, Colo.</i>	Hagerman Hall.
Gipe, Guilford Lawrence	<i>Cedaredge, Colo.</i>	220 N. Cascade Ave.
Glassford, Edith Irene	<i>Grand Junction.</i>	Bemis Hall.
Goode, Frank Turner	<i>Olathe, Colo.</i>	Hagerman Hall.
Goss, Mae	<i>Colorado Springs.</i>	1715 N. Weber St.
Graham, Donald Bourne	<i>Colorado Springs.</i>	1927 N. Tejon St.
Greer, Bertie Lester (E)	<i>Colorado Springs.</i>	1616 Washington Ave.
Gregg, Golda	<i>Austin, Minn.</i>	Ticknor Hall.
Griffith, Kean	<i>Cory, Colo.</i>	Hagerman Hall.
Hadley, Beryl Leon (E)	<i>Paonia, Colo.</i>	827 N. Corona St.
Halsey, Ray Nicholas	<i>Coffeyville, Kans.</i>	Manitou, Colo.
Hamilton, Paul Myron	<i>Colorado Springs.</i>	115 E. Willamette Av.
Hanson, Hubert Lars	<i>Sidney, Iowa.</i>	911 N. Nevada Ave.
Harlan, Lois Logan	<i>Colorado Springs.</i>	905 Cheyenne Rd.
Harmon, Appleton Jesse (E)	<i>Provo, Utah.</i>	Hagerman Hall.
Hayashi, Kokichi	<i>Tokyo, Japan.</i>	1215 N. Cascade Ave.
Hedlund, Paul Raymond	<i>Colorado Springs.</i>	1343 N. Nevada Ave.
Helm, Alfred Benjamin	<i>Ft. Collins, Colo.</i>	Hagerman Hall.
Hemenway, Genette	<i>Colorado Springs.</i>	17 W. Del Norte St.
Henderson, Russell Stewart (E)	<i>Durango, Colo.</i>	Hagerman Hall.
Henderson, Zella May	<i>Pueblo, Colo.</i>	Ticknor Hall.
Henry, Helen Jean	<i>Pueblo, Colo.</i>	McGregor Hall.
Henry, Irene	<i>Colorado City, Colo.</i>	308 S. 17th St.
Hewett, Charles Francis	<i>Colorado Springs.</i>	1927 Wood Ave.
Hollister, George Eddy (E)	<i>Denver, Colo.</i>	Hagerman Hall.
Holloway, Florence Marie	<i>Colorado Springs.</i>	24 E. Dale St.
Holm, Peter Cornelius	<i>Amo, Colo.</i>	1160 N. Weber St.
Holman, Harry Arthur	<i>Colorado Springs.</i>	425 E. St. Vrain St.
Hopkins, Hazel Maud	<i>Denver, Colo.</i>	Bemis Hall.
Hopkins, Horace Herbert (E)	<i>Grand Junction.</i>	Hagerman Hall.
Horton, Ralph Casner	<i>Olathe, Colo.</i>	Hagerman Hall.
Howard, Elmer Elbert	<i>Greeley, Colo.</i>	1130 N. Cascade Ave.
Howard, George Edward	<i>S. Pasadena, Calif.</i>	Hillcrest, Manitou.
Hubbell, Mary Livingston	<i>Colorado Springs.</i>	1915 Wood Ave.
Hughes, Ona Beatrice	<i>Everton, Mo.</i>	1835 Colorado Ave.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Jewell, Henry (E)	<i>Colorado Springs.</i>	10 W. Mill St.
Johnson, Charles Arthur, Jr.	<i>Durango, Colo.</i>	Plaza Hotel.
Johnson, Ernest Amos	<i>Ouray, Colo.</i>	311 E. Willamette Ave.
Joseph, John Elmer	<i>Colorado City, Colo.</i>	111 Lincoln Ave.
Kelly, William Andrew	<i>Colorado Springs.</i>	232 N. Nevada Ave.
Kennon, Anne Byrde	<i>Denver, Colo.</i>	Bemis Hall.
Kenworthy, Myla	<i>Pueblo, Colo.</i>	McGregor Hall.
King, Arthur Dale	<i>Greeley, Colo.</i>	1230 N. Tejon St.
King, Kathryn	<i>Denver, Colo.</i>	717 N. Tejon St.
Kingman, Helen Mary	<i>Colorado Springs.</i>	Bemis Hall.
Kinnikin, Mathias Bond (E)	<i>Colorado Springs.</i>	1213 N. Custer St.
Kinsman, Mary Esther	<i>Colorado Springs.</i>	220 S. Cascade Ave.
Kittleman, Mary Elizabeth	<i>Colorado Springs.</i>	1419 N. Tejon St.
Koch, Dorothy	<i>Aspen, Colo.</i>	Bemis Hall.
Kurth, Norval Alvin (E)	<i>Colorado Springs.</i>	1027 N. Corona St.
Landrum, Agnes Virginia	<i>Sterling, Colo.</i>	Ticknor Hall.
Lang, John Joseph (E)	<i>Denver, Colo.</i>	936 N. Spruce St.
Langridge, Ina Belle	<i>Colorado City, Colo.</i>	310 Monroe Ave.
Larsen, Lloyd Carlton	<i>La Junta, Colo.</i>	1319 N. Nevada Ave.
Law, Nellie	<i>Colorado Springs.</i>	816 N. Weber St.
Lawrence, Grace	<i>Colorado Springs.</i>	1709 Colorado Ave.
Leisy, Agnes	<i>Montrose, Colo.</i>	Ticknor Hall.
Lendrum, Alexander Martin	<i>Colorado Springs.</i>	420 E. San Rafael St.
Lewis, Waldo McKinney	<i>Delta, Colo.</i>	Hagerman Hall.
Lindsey, Arlo John	<i>Yuma, Colo.</i>	230 S. Tejon St.
Loomis, Dorothy Crofts	<i>Denver, Colo.</i>	Montgomery Hall.
McClure, Ornola Nell	<i>Sterling, Colo.</i>	Ticknor Hall.
McCoy, Orlando Zeben (E)	<i>Colorado Springs.</i>	521 S. Tejon St.
McDougall, John Allen	<i>Longmont, Colo.</i>	1410 N. Nevada Ave.
McIntire, Oliver Simpson	<i>Olathe, Colo.</i>	Hagerman Hall.
McIntosh, Margaret	<i>Colorado Springs.</i>	840 E. Platte Ave.
McKibben, Helen Lenora	<i>Colorado Springs.</i>	317 S. Nevada Ave.
McKnight, Martin Luther (E)	<i>Colorado City, Colo.</i>	112 Lincoln Ave.
McNair, Frank Joseph	<i>Caldwell, Kans.</i>	1343 N. Nevada Ave.
McPherson, Donald Alexander (E)	<i>Colorado Springs.</i>	1412 S. Nevada Ave.
McWhorter, Lucile	<i>Denver, Colo.</i>	Bemis Hall.
Madden, John Henry	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Magee, Annie Gretchen	<i>Alamosa, Colo.</i>	Ticknor Hall.
Marshall, Stanley (E)	<i>Greeley, Colo.</i>	319 N. Logan Ave.
Mendenhall, Marion Naomi	<i>Montrose, Colo.</i>	Bemis Hall.
Miller, Hazel Elsie	<i>Manitou, Colo.</i>	Manitou, Colo.
Millisack, Frank Wesley	<i>Goodland, Kans.</i>	519 E. Cache la Poudre.
Milone, Lois Marie	<i>Colorado Springs.</i>	1536 Wood Ave.
Moore, Clarence Leslie (E)	<i>Las Animas, Colo.</i>	Hagerman Hall.
Moulton, Ellen Irene	<i>Pueblo, Colo.</i>	McGregor Hall.
Munson, Marguerite	<i>Aurora, Neb.</i>	Ticknor Hall.
Murray, Geraldine	<i>Cheyenne, Wyo.</i>	Bemis Hall.
Musgrove, Arthur Frederick	<i>Denver, Colo.</i>	1125 N. Nevada Ave.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Neuswanger, Chris Harold	<i>Greeley, Colo.</i>	1130 N. Cascade Ave.
Nicholson, Elizabeth	<i>Colorado Springs.</i>	110 S. Wahsatch Ave.
Nix, Lloyd Stevens	<i>Austin, Colo.</i>	Hagerman Hall.
Noyes, Richard Atherton	<i>South Byfield, Mass.</i>	1205 Wood Ave.
Nutt, Myrtle Irene	<i>Mendon, Ill.</i>	120 E. Del Norte St.
Offutt, Samuel Russell (E)	<i>Bloomfield, Ky.</i>	1211 N. Nevada Ave.
Oldfield, Mary Masilda	<i>Colorado Springs.</i>	415 S. Nevada Ave.
Osborn, Oiven	<i>Paonia, Colo.</i>	827 N. Corona St.
Paine, Myrtes Adelle	<i>Colorado Springs.</i>	1342 N. El Paso St.
Palmer, Martha	<i>Steamboat Springs.</i>	310 E. Monument St.
Palmer, Russell Elwood (E)	<i>Steamboat Springs.</i>	310 E. Monument St.
Palmer, Walter Lincoln	<i>Castle Rock, Colo.</i>	1517 N. Weber St.
Park, Harold Alexander (E)	<i>Longmont, Colo.</i>	111 E. Dale St.
Patton, Warren Augustus	<i>Grand Junction.</i>	311 E. Willamette Ave.
Paul, Jeanie Allyn	<i>Durango, Colo.</i>	Ticknor Hall.
Peterson, Harold Lester	<i>Colorado Springs.</i>	828 S. Cascade Ave.
Plumb, Horace Donald	<i>Delta, Colo.</i>	Hagerman Hall.
Pond, Harold Mears	<i>Colorado Springs.</i>	1207 Washington Ave.
Porter, Ida Virginia	<i>Collbran, Colo.</i>	Ticknor Hall.
Potter, Clarence Leo	<i>Denver, Colo.</i>	911 N. Nevada Ave.
Price, Dorothy Jane	<i>Colorado Springs.</i>	215 S. Nevada Ave.
Prichard, George William	<i>Pratt, Kans.</i>	310 E. Dale St.
Rabey, Clara Bawden	<i>Springfield, Ohio.</i>	Montgomery Hall.
Reid, Lucy	<i>Colorado Springs.</i>	505 N. Weber St.
Rhamey, Wylda Gertrude	<i>Omaha, Neb.</i>	Bemis Hall.
Rice, Gerald Homer	<i>Pierce, Neb.</i>	1010 N. Wahsatch Av.
Ritter, Lucy Anita	<i>New Castle, Colo.</i>	Montgomery Hall.
Robbins, Howard Edwards	<i>Denver, Colo.</i>	1125 N. Nevada Ave.
Robinson, George Sidney	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Rogers, Mildred Pollard	<i>Colorado Springs.</i>	330 E. Bijou St.
Root, Burdette Burgess	<i>Colorado Springs.</i>	1804 N. Prospect St.
Root, Viva Margaret	<i>Colorado Springs.</i>	1804 N. Prospect St.
Rosenburg, Helen	<i>Glenwood Springs.</i>	Bemis Hall.
Schuelke, Elmer Alvin	<i>Cheyenne Wells.</i>	Hagerman Hall.
Schweiger, Carl Albert	<i>Lafayette, Colo.</i>	312 N. Cascade Ave.
Scott, Earl Benjamin	<i>Delta, Colo.</i>	Hagerman Hall.
Shaw, Philip Martin	<i>Colorado Springs.</i>	23 W. Washington St.
Sheffer, Wilhelm Grosskreutz	<i>Colorado Springs.</i>	411 W. Kiowa St.
Shelden, Frank Clifton (E)	<i>Colorado Springs.</i>	321 W. Kiowa St.
Shepard, Irma Belle	<i>Cañon City, Colo.</i>	Montgomery Hall.
Sheppard, Paul Richard	<i>Eaton, Colo.</i>	Hagerman Hall.
Sheppard, Percival Eugene	<i>Eaton, Colo.</i>	Hagerman Hall.
Sibley, Henry Down	<i>Colorado Springs.</i>	9 Cheyenne Blvd.
Simpson, Vernon Elizabeth	<i>Grand Junction.</i>	Montgomery Hall.
Sinden, Roger Hull (E)	<i>Cañon City, Colo.</i>	Hagerman Hall.
Skinner, Marian Louise	<i>Colorado Springs.</i>	1428 N. Nevada Ave.
Smith, Howard Clinton	<i>Denver, Colo.</i>	911 N. Nevada Ave.
Speer, Katharine Van der Veer	<i>Somerville, N. J.</i>	19 E. San Miguel St.
Spencer, Dwight	<i>Colorado Springs.</i>	2015 N. Tejon St.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Steedman, Reba	<i>Hobart, Okla.</i>	McGregor Hall.
Stubenrauch, Marie Louise	<i>Colorado Springs.</i>	701 E. Columbia St.
Stukey, David Chapman (E)	<i>Steamboat Springs.</i>	18 Boulder Crescent.
Stukey, Lorna	<i>Steamboat Springs.</i>	Bemis Hall.
Tanner, James Frederick	<i>Denver, Colo.</i>	1122 N. Cascade Ave.
Taylor, Jean Katherine	<i>Arlington Hgts., Ill.</i>	107 S. Nevada Ave.
Thomas, Thornton Henry, Jr.	<i>Ordway, Colo.</i>	1125 N. Nevada Ave.
Thomson, Homer Gordon (E)	<i>Estes Park, Colo.</i>	
Tohill, Lawrence Springer	<i>Monte Vista, Colo.</i>	219 E. St. Vrain St.
Tovatt, Vernon Joseph (E)	<i>Swink, Colo.</i>	911 N. Nevada Ave.
Tucker, Beverley St. George	<i>Colorado Springs.</i>	817 N. Weber St.
Tucker, Harriet Ann Howard	<i>Colorado Springs.</i>	817 N. Weber St.
Tucker, Hayse Robert	<i>Colorado Springs.</i>	215 S. 12th St.
Vates, Robert William	<i>Pueblo, Colo.</i>	911 N. Nevada Ave.
Verner, Ogden E.	<i>Paonia, Colo.</i>	1106 N. Weber St.
Vickery, Earl Edward	<i>Delta, Colo.</i>	Hagerman Hall.
Vorrath, Edna Hermina	<i>Colorado Springs.</i>	219 E. Fontanero St.
Wafer, Esther Ruth	<i>Denver, Colo.</i>	Bemis Hall.
Walden, Ralph Myrrl	<i>Hoxie, Kans.</i>	322 N. Nevada Ave.
Walton, Edith Gertrude	<i>Colorado Springs.</i>	1720 Wood Ave.
Wendell, Forest Ellsworth	<i>Buttes, Colo.</i>	629 N. Weber St.
White, Helen Phillips	<i>Colorado Springs.</i>	23 W. 2nd St.
Whittenberger, Milton	<i>Colorado Springs.</i>	1125 N. Nevada Ave.
Wilkin, Juliet	<i>Cañon City, Colo.</i>	Bemis Hall.
Williams, Donald	<i>Lamar, Colo.</i>	1122 N. Cascade Ave.
Williams, Lucile Elizabeth	<i>Pueblo, Colo.</i>	Bemis Hall.
Willis, Robert Mills	<i>Cripple Creek, Colo.</i>	Hagerman Hall.
Wills, Benjamin Grun	<i>Colorado City, Colo.</i>	2018 Armstrong Ave.
Witham, Henry Bryan	<i>Orient, Iowa.</i>	911 N. Nevada Ave.
Wonders, Will John (E)	<i>Delta, Colo.</i>	Hagerman Hall.
Wood, Charles Earl (E)	<i>Cripple Creek, Colo.</i>	823 E. Boulder St.
Wood, Harriet Cleora	<i>Colorado Springs.</i>	7 Gladstone Apts.
Wood, William Lyon	<i>Montrose, Colo.</i>	226 E. Monument St.
Wubben, Eugene	<i>Paonia, Colo.</i>	Plaza Hotel.

SPECIALS AND REGISTERED VISITORS.

Adams, Mrs. Frederick W.	<i>Colorado Springs.</i>	1119 Palmer Park Blvd.
Anderson, S. Eleanor	<i>Colorado Springs.</i>	1231 N. Cascade Ave.
Bailey, Frank Howard	<i>Des Moines, Iowa.</i>	601 N. Wahsatch Ave.
Blackman, Ida Louise	<i>Colorado Springs.</i>	1806 Wood Ave.
Bunner, Katharine	<i>Colorado City, Colo.</i>	2030 Armstrong Ave.
Collins, Mrs. Ada R.	<i>Colorado Springs.</i>	The Plaza.
Compton, Edward Allard	<i>Stephenville, Tex.</i>	Hagerman Hall.
Cree, Leonora	<i>Colorado Springs.</i>	1314 N. Tejon St.
Dickey, Nana B.	<i>Colorado Springs.</i>	319 N. Weber St.
Early, Mrs. Georgia	<i>Colorado Springs.</i>	914 E. Cimarron St.
Farnsworth, Alice Winslow	<i>Colorado Springs.</i>	531 N. Cascade Ave.
Ferrier, Annie	<i>Manitou, Colo.</i>	Manitou, Colo.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Finnup, Gladys	<i>Garden City, Kans.</i>	518 N. Cascade Ave.
Fischer, Claribel Ben Hur	<i>Santa Fé, N. M.</i>	Ticknor Hall.
Fisher, Lucille Eleanor	<i>Colorado Springs.</i>	1316 N. Nevada Ave.
Flora, Dr. W. W.	<i>Colorado Springs.</i>	2129 N. Nevada Ave.
Fonst, Grace	<i>Harrisonville, Mo.</i>	1011 S. Weber St.
Francis, Mrs. James	<i>Colorado Springs.</i>	230 E. Yampa St.
Groves, Rebecca	<i>Colorado Springs.</i>	6 Colchester Apt.
Hadley, Jennie M.	<i>Colorado City, Colo.</i>	112 Colorado Ave.
Hawkins, Mrs. J. Dawson	<i>Colorado Springs.</i>	1306 Wood Ave.
Herrmann, Joseph V.	<i>Louisville, Ky.</i>	221 Cheyenne Rd.
Huntoon, Sarah	<i>Colorado Springs.</i>	1328 N. Tejon St.
Hutson, Mrs. Ida C.	<i>Colorado Springs.</i>	827 N. Cascade Ave.
Jordan, Harriet	<i>Colorado Springs.</i>	22 E. San Miguel St.
Jocelyn, Emma C.	<i>Colorado City, Colo.</i>	116 Colorado Ave.
Kissell, Charlotte S.	<i>Colorado Springs.</i>	1110 N. Tejon St.
Kneip, Augusta	<i>Colorado City, Colo.</i>	116 Colorado Ave.
Latimer, Charles Trowbridge	<i>Colorado Springs.</i>	1031 N. Wahsatch Av.
Latimer, Janie Louise	<i>Colorado Springs.</i>	1031 N. Wahsatch Av.
Lippincott, Mrs. Camilla A.	<i>Colorado Springs.</i>	Broadmoor.
Lippincott, Camilla	<i>Colorado Springs.</i>	Broadmoor.
Loper, Grace	<i>Colorado Springs.</i>	320 N. Cascade Ave.
Lyons, Mabel Jessie	<i>Chicago, Ill.</i>	808 N. Weber St.
McFadden, Elizabeth	<i>Colorado Springs.</i>	1331 N. Tejon St.
Moore, Ethel	<i>Colorado Springs.</i>	1140 Wood Ave.
Moss, Emma	<i>Colorado Springs.</i>	801 N. Nevada Ave.
Neuer, Agnes	<i>Colorado Springs.</i>	412 E. Yampa St.
Newbold, Mrs. T. R.	<i>Colorado Springs.</i>	106 E. San Rafael St.
Parsons, Esther	<i>Colorado Springs.</i>	1130 Wood Ave.
Pennoyer, Janet Grace	<i>Colorado Springs.</i>	1019 N. Nevada Ave.
Pennoyer, Mrs. G. M.	<i>Colorado Springs.</i>	1019 N. Nevada Ave.
Perryman, Ara B.	<i>Colorado Springs.</i>	1809 N. Tejon St.
Pierce, Margaret A.	<i>Colorado Springs.</i>	1231 N. Cascade Ave.
Pratt, F. K.	<i>Colorado Springs.</i>	21 W. St. Elmo Ave.
Remick, Nellie A.	<i>Colorado Springs.</i>	320 N. Cascade Ave.
Riggs, Eva	<i>Colorado Springs.</i>	Alamo Hotel.
Roberson, Gladys Adeline	<i>Glenwood Springs.</i>	McGregor Hall.
Roeser, Jacob, Jr.	<i>Manitou, Colo.</i>	Manitou, Colo.
Rudy, Anna	<i>Colorado Springs.</i>	209 N. Arcadia St.
Simkins, Louise	<i>Colorado Springs.</i>	1345 N. Weber St.
Spicer, Wilma Olive	<i>Colorado Springs.</i>	423 N. Weber St.
Stevens, Mrs. F. T.	<i>Colorado Springs.</i>	1109 Wood Ave.
Strohm, Ella	<i>Colorado Springs.</i>	512 S. Prospect St.
Strohm, Lillie B.	<i>Colorado Springs.</i>	512 S. Prospect St.
Taylor, Mrs. G. M.	<i>Colorado Springs.</i>	405 N. Cascade Ave.
Warnock, Janet Zilpah	<i>Loveland, Colo.</i>	McGregor Hall.
Wieman, Emma	<i>Colorado City, Colo.</i>	303 Jackson Ave.
Willis, Belle	<i>Colorado Springs.</i>	416 E. San Miguel St.

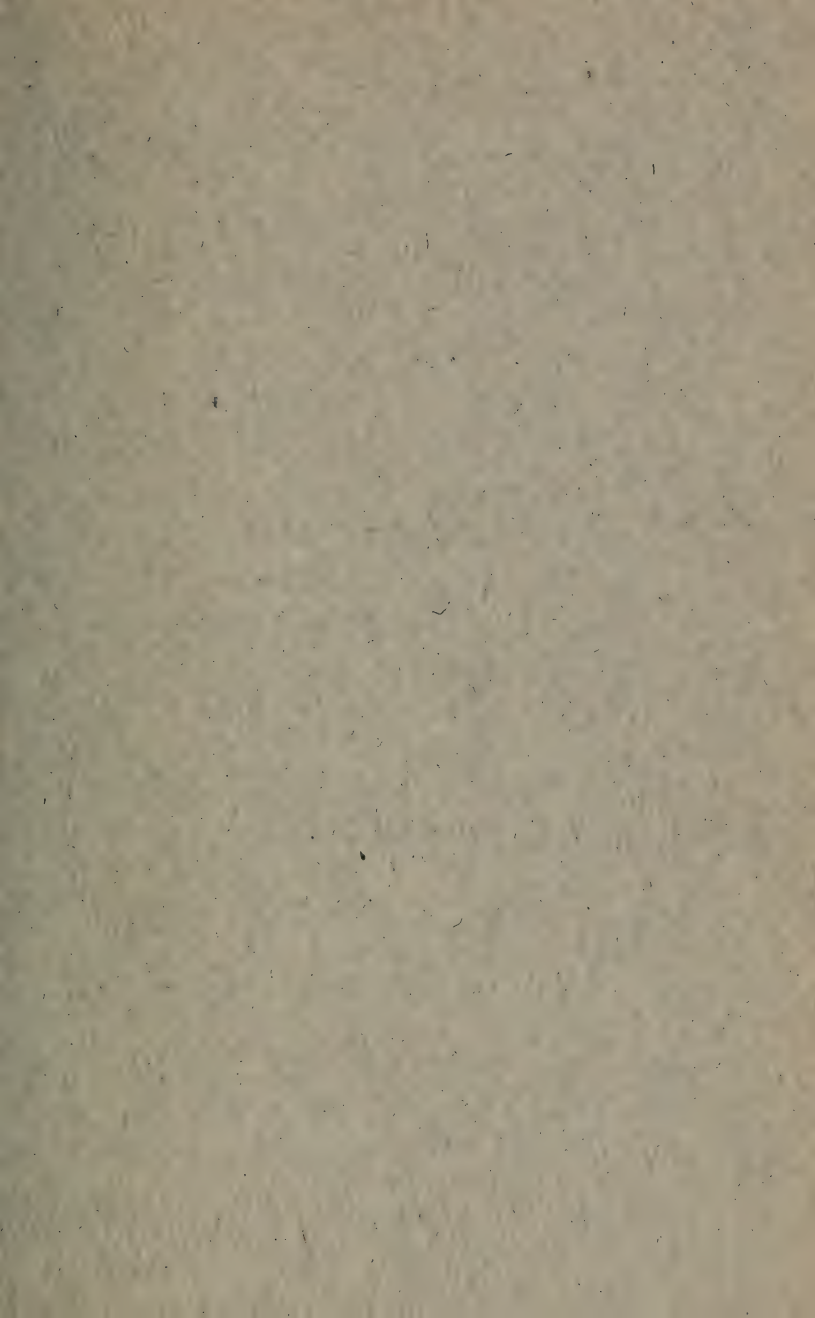
DEPARTMENT OF MUSIC.

NAME.	HOME ADDRESS	CITY ADDRESS.
Ambrose, Lois	<i>Ft. Morgan, Colo.</i>	Ticknor Hall.
Beach, Edna	<i>Colorado City, Colo.</i>	3 Ruby Ave.
Bispham, Anna	<i>Colorado Springs.</i>	2111 N. Nevada Ave.
Carroll, Clement John	<i>Colorado Springs.</i>	306 E. Bijou St.
Clough, Marie Catherine	<i>Colorado Springs.</i>	623 N. Tejon St.
Dawson, Lydia	<i>Linwood, Neb.</i>	Bemis Hall.
Deane, Ruth	<i>Colorado Springs.</i>	419 N. Pine St.
De Nio, Lois	<i>Colorado Springs.</i>	25 E. Las Animas St.
Durbin, Helen Avery	<i>Denver, Colo.</i>	Montgomery Hall.
Durnell, Margaret	<i>Colorado Springs.</i>	427 W. Uintah St.
Evans, Mary Louise	<i>Fountain, Colo.</i>	
Finnup, Gladys Katherine	<i>Garden City, Kans.</i>	518 N. Cascade Ave.
Fischer, Claribel Ben Hur	<i>Santa Fé, N. M.</i>	Bemis Hall.
Friedman, Mrs. Joseph	<i>Colorado Springs.</i>	805 E. Monument St.
Furman, Anson Lee	<i>Colorado Springs.</i>	1335 N. Nevada Ave.
Furman, Nell	<i>Colorado Springs.</i>	1335 N. Nevada Ave.
Furman, Rachel	<i>Colorado Springs.</i>	1335 N. Nevada Ave.
Furman, Ruth	<i>Colorado Springs.</i>	1335 N. Nevada Ave.
Grace, Joseph Marckey James	<i>Colorado Springs.</i>	230 N. Chestnut.
Graham, Margery	<i>Pueblo, Colo.</i>	McGregor Hall.
Griswold, Beryl	<i>Colorado Springs.</i>	815 N. Weber St.
Hagen, Esther	<i>Colorado Springs.</i>	Pike View.
Hale, Donald Emerson	<i>Colorado Springs.</i>	1424 N. Nevada Ave.
Hamilton, Sara Grace	<i>Colorado Springs.</i>	215 E. Willamette Ave.
Henderson, Isabel Corbin	<i>Sterling, Colo.</i>	Ticknor Hall.
Hinch, Sarah Gladys	<i>Fountain, Colo.</i>	
Hopkins, Hazel Maud	<i>Denver, Colo.</i>	Bemis Hall.
Howard, Elmer Elbert	<i>Greeley, Colo.</i>	1130 N. Cascade Ave.
Hunt, Winifred Belle	<i>Denver, Colo.</i>	McGregor Hall.
Hunter, Bessie May	<i>Colorado Springs.</i>	811 E. Monument St.
Kampf, Frederick William	<i>Colorado Springs.</i>	1516 N. Tejon St.
Koch, Dorothy	<i>Aspen, Colo.</i>	Bemis Hall.
Korsmeyer, Helen	<i>Colorado Springs.</i>	1411 N. Weber St.
Leslie, Myrtle	<i>Colorado Springs.</i>	433 W. Bijou St.
Lindbloom, Alfreda Albertina	<i>Colorado Springs.</i>	18 E. Fontanero St.
Lindbloom, Edna Ruth	<i>Colorado Springs.</i>	18 E. Fontanero St.
Mahaney, Max Madison	<i>Colorado Springs.</i>	Y. M. C. A.
Munson, Marguerite	<i>Aurora, Neb.</i>	Ticknor Hall.
Nutt, Myrtle Irene	<i>Mendon, Ill.</i>	120 E. Del Norte St.
Organ, Ruth Margaret	<i>Colorado Springs.</i>	424 N. Pine St.
Paige, Margaret	<i>Wigwam, Colo.</i>	
Painter, Gladys Louise	<i>Colorado Springs.</i>	324 E. Kiowa.
Palmer, Martha Amanda	<i>Steamboat Springs.</i>	310 E. Monument St.
Parsons, Edward Smith, Jr.	<i>Colorado Springs.</i>	1130 Wood Ave.
Pendergast, Nell Marie	<i>Colorado Springs.</i>	220 E. Monument St.
Porter, Ida Virginia	<i>Collbran, Colo.</i>	Ticknor Hall.
Rice, Gerald Homer	<i>Pierce, Neb.</i>	1010 N. Wahsatch Av.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Ritter, Lucy Anita	<i>Newcastle, Colo.</i>	McGregor Hall.
Roberson, Gladys Adeline	<i>Glenwood Springs.</i>	McGregor Hall.
Roberts, Ivor Simpson	<i>Springfield, Ky.</i>	1122 N. Cascade Ave.
Robinson, Leila Adelaide	<i>Colorado Springs.</i>	230 E. Kiowa St.
Root, Viva Margaret	<i>Colorado Springs.</i>	1804 N. Prospect St.
Rosenberg, Helen Margaret	<i>Glenwood Springs.</i>	Bemis Hall.
Stelson, Raye	<i>Colorado Springs.</i>	209 W. Cheyenne Rd.
Stelson, Julia Catherine	<i>Colorado Springs.</i>	209 W. Cheyenne Rd.
Thill, Estelle Louise	<i>Colorado City, Colo.</i>	305 Jefferson Ave.
Thrall, Ernestine	<i>Colorado Springs.</i>	119 Tyler Place.
Wafer, Esther Ruth	<i>Denver, Colo.</i>	Bemis Hall.
Walls, Alma Irene	<i>Colorado Springs.</i>	220 E. Fountain St.
Warnock, Janet Zilpah	<i>Loveland, Colo.</i>	McGregor Hall.
Waterhouse, Georgiana	<i>Weiser, Idaho.</i>	McGregor Hall.
Woodring, Lillian Besse	<i>Colorado Springs.</i>	302 S. Prospect St.

SUMMARY.

Graduate Students	9
Seniors	58
Juniors	83
Sophomores	154
Freshmen	237
Specials and Visitors	59
Undergraduates	591
Total	600
School of Music	62
	662
Names Counted Twice	28
Grand Total	634



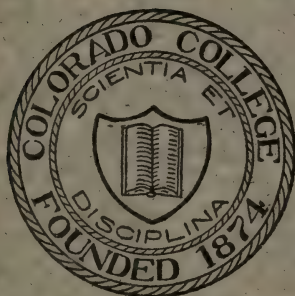


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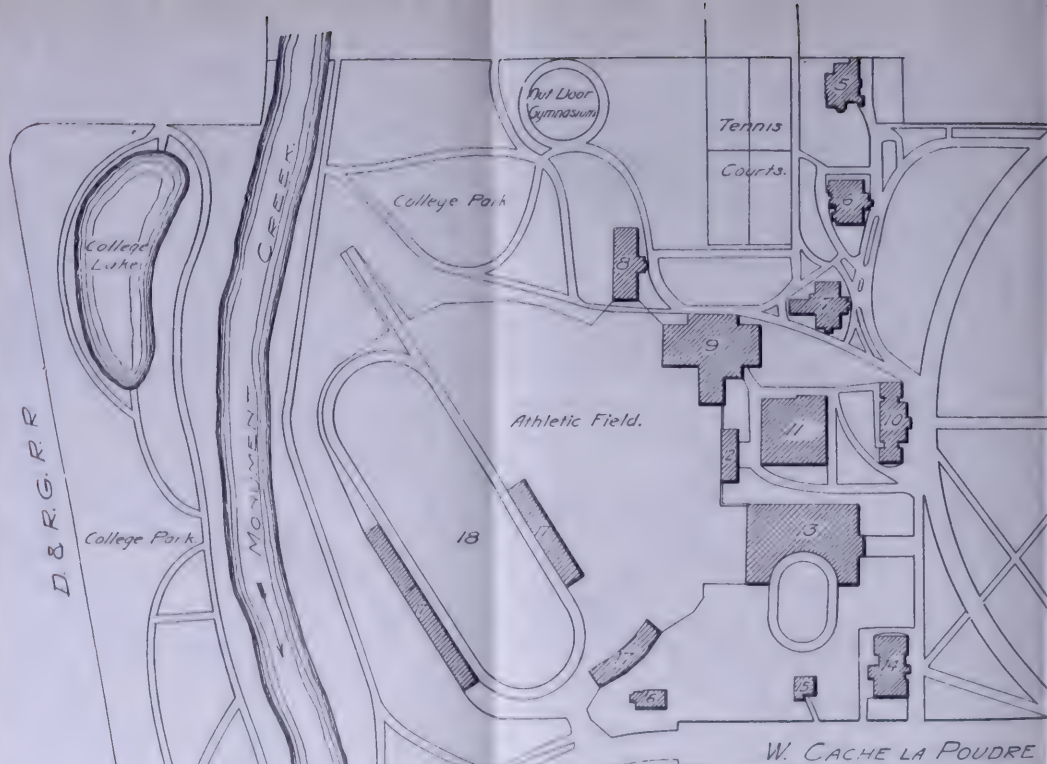
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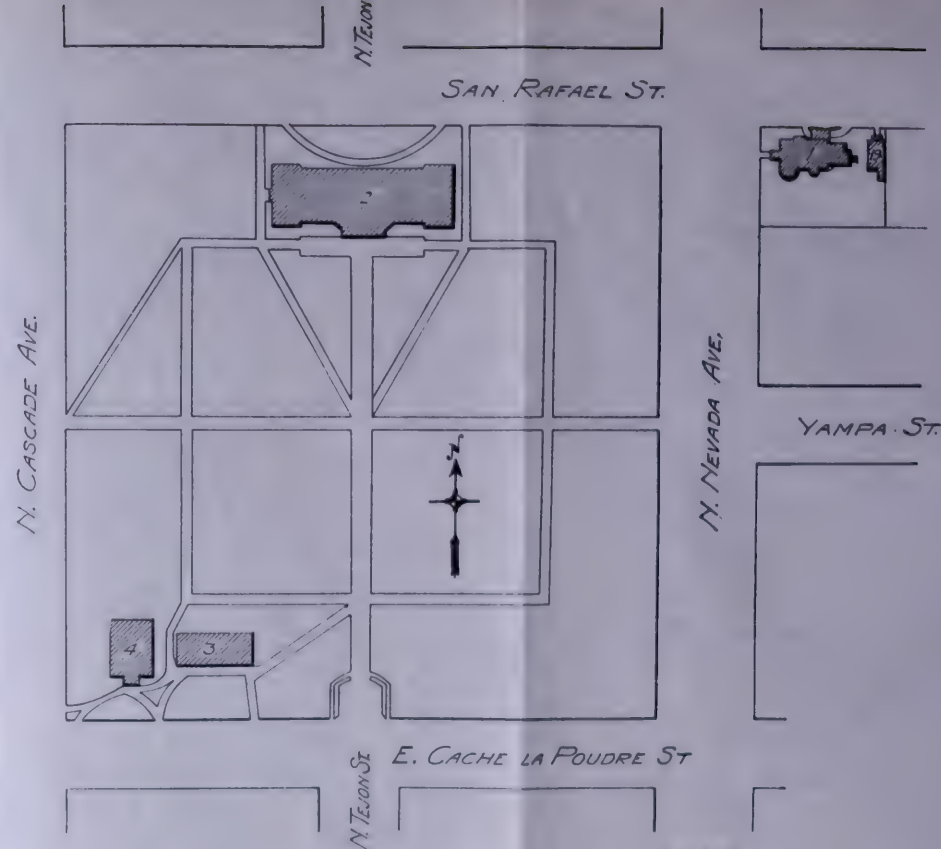
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Key to Numbers.

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|-----------------------------|------------------------------|
| 1. Administration Building. | 10. Coffer Hall. |
| 2. Palmer Science Hall. | 11. Shops and Power House. |
| 3. Perkins Fine Arts Hall. | 12. Utility Building. |
| 4. Coburn Library. | 13. F.W. Cossitt Memorial. |
| 5. President's Home. | 14. Hagerman Hall. |
| 6. Montgomery Hall. | 15. Superintendent's House. |
| 7. Ticknor Hall. | 16. Observatory. |
| 8. McGregor Hall. | 17. Grand Stands. |
| 9. Bemis Hall. | 18. Washburn Athletic Field. |
| 19. Garage. | |



MAP
OF THE
COLORADO COLLEGE
CAMPUS.

COLORADO COLLEGE PUBLICATION

Bulletin Series No. 48

General Series No. 86

FORTY-SECOND
ANNUAL CATALOGUE
of
COLORADO
COLLEGE

1915-1916
COLORADO SPRINGS
COLORADO

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Contents

	PAGE
Calendar	5
Historical Statement.....	6
Organization of the College.....	7
Trustees	9
Standing Committees of the Trustees.....	10
Officers of Administration.....	11
Board of Control of the Library.....	12
Faculty	13
Committees of the Faculty.....	19
Class Officers.....	20
Admission—	
Registration	21
Entrance Requirements—	
For Courses leading to the Degrees of Bachelor of Arts, and Bachelor of Arts in Business Administration and Banking	21
For Courses leading to the Degrees of Bachelor of Science in Engineering and Forest Engineer.....	22
Unit Courses.....	23
Admission by Certificate.....	28
Accredited Schools.....	29
Admission to Advanced Standing.....	30
Special Students.....	30
Requirements for Degrees—	
General Rules.....	31
Degree of Bachelor of Arts.....	31
Required Subjects.....	32
Requirements Arranged by Years.....	32
Major Subject.....	33
Electives	34
Degree of Bachelor of Arts in Business Administration and Banking	34
Degree of Bachelor of Science in Civil and Irrigation En- gineering	37
Degree of Bachelor of Science in Electrical Engineering.....	40
Degree of Forest Engineer.....	43
Advanced Degrees.....	45
Degree of Master of Arts.....	45
Degrees of Civil Engineer and Electrical Engineer.....	46
Degree of Master of Forestry.....	47
The Harvard Exchange.....	47

Courses of Instruction—	PAGE
Art	49
Astronomy	50
Biblical Literature and Applied Religion.....	51
Biology	53
Business Administration and Banking.....	57
Chemistry	59
Civil and Irrigation Engineering.....	62
Economics and Sociology.....	68
Education	70
Electrical Engineering.....	72
English	75
Forestry	79
Geology	82
German	83
Graphics	85
Greek	87
History	88
Latin	89
Mathematics	90
Music	91
Philosophy	92
Physical Education.....	95
Physics	98
Political Science.....	101
Public Speaking.....	102
Romance Languages.....	102
Shop Work.....	106
Teachers, Courses for.....	107
Department of Music—	
Faculty	108
Admission	108
Courses of Study.....	108
Major in Art and Music.....	114
Equipment	114
Tuition	115
General Information—	
Location	116
College Buildings.....	116
Library	119
Art Collections.....	120

Laboratories and Apparatus—	PAGE
Biology	121
Chemistry	122
Geology	123
Physics	124
Psychology	124
Shops	125
Civil Engineering Laboratories.....	127
Surveying—Summer School.....	128
Illustrative Apparatus and Material.....	129
Electrical Engineering Laboratories.....	130
The Manitou Forest—a Field Laboratory in Forestry.....	132
Observatory and Meteorological Station.....	133
Museum	133
Religious Life.....	136
Student Publications.....	138
Literary Societies.....	138
Engineers' Club.....	138
Foresters' Club.....	139
The Student Commission of Colorado College.....	139
Oratorical and Debating Contests.....	140
Phi Beta Kappa.....	140
College Publication.....	140
College Lecture Course.....	141
Alumni Association.....	142
Expenses	142
Scholarships	144
Prizes	146
Woman's Educational Society.....	146
Hospital Fund.....	147
Needs of College.....	147
Forms of Bequest.....	149
Award of Honors and Scholarships; Phi Beta Kappa Elections, 1915	150
Degrees Conferred in 1915.....	151
Students—	
Graduate Students.....	153
Undergraduates	153-166
Specials and Registered Visitors.....	166
Department of Music.....	168
Summary	169

Calendar

1916

Jan. 4—CHRISTMAS RECESS ENDS at 8 a. m.....	Tuesday
Jan. 21—Mid-Year Examinations begin.....	Friday
Jan. 28—Trustees' Day.....	Friday
Jan. 31—SECOND HALF-YEAR BEGINS at 8 a. m.....	Monday
Feb. 20—Day of Prayer for Colleges.....	Sunday
Feb. 22—Washington's Birthday: a holiday.....	Tuesday
Mar. 11—Condition Examinations begin at 8 a. m.....	Saturday
Mar. 21—Last day for registering for Hawley and Mary G. Slocum scholarships.....	Tuesday
Mar. 25—SPRING RECESS BEGINS at 1 p. m.....	Saturday
Apr. 4—SPRING RECESS ENDS at 8 a. m.....	Tuesday
Apr. 21—Good Friday: a holiday.....	Friday
May 30—Memorial Day: a holiday.....	Tuesday
June 2—Examinations begin.....	Friday
June 5—Summer School of Surveying opens in Manitou Park.....	Monday
June 11—Baccalaureate Sermon.....	Sunday
June 12—Class Day.....	Monday
June 13—Annual Meeting of Board of Trustees.....	Tuesday
June 14—COMMENCEMENT.....	Wednesday
Sept. 12—Registration.....	Tuesday
Sept. 12—Residence Halls open.....	Tuesday
Sept. 13—FIRST HALF-YEAR BEGINS at 8 a. m.....	Wednesday
Sept. 16—Condition Examinations for Engineers at 8 a. m.....	Saturday
Sept. 23—Condition Examinations begin at 8 a. m.....	Saturday
Oct. 13—Last day for registering for post-graduate work.....	Friday
Oct. 20—Insignia Day.....	Friday
Nov. 29—Thanksgiving Recess begins at 5 p. m.....	Wednesday
Dec. 4—Thanksgiving Recess ends at 8 a. m.....	Monday
Dec. 22—CHRISTMAS RECESS BEGINS at 5 p. m.....	Friday

1917

Jan. 9—CHRISTMAS RECESS ENDS at 8 a. m.....	Tuesday
Jan. 19—Mid-Year Examinations begin.....	Friday
Jan. 26—Trustees' Day.....	Friday
Jan. 29—SECOND HALF-YEAR BEGINS at 8 a. m.....	Monday
Feb. 22—Washington's Birthday: a holiday.....	Thursday
Feb. 25—Day of Prayer for Colleges.....	Sunday
Mar. 10—Condition Examinations begin at 8 a. m.....	Saturday
Mar. 20—Last day for registering for Hawley and Mary G. Slocum scholarships.....	Tuesday
Mar. 31—SPRING RECESS BEGINS at 1 p. m.....	Saturday
Apr. 10—SPRING RECESS ENDS at 8 a. m.....	Tuesday
May 30—Memorial Day: a holiday.....	Wednesday
June 1—Examinations begin.....	Friday
June 4—Summer School of Surveying opens in Manitou Park.....	Monday
June 10—Baccalaureate Sermon.....	Sunday
June 11—Class Day.....	Monday
June 12—Annual Meeting of Board of Trustees.....	Tuesday
June 13—COMMENCEMENT.....	Wednesday

Historical Statement

Colorado College is the oldest institution of higher education in the State. In 1874, while Colorado was yet a territory, a College upon a broad Christian foundation was established in Colorado Springs. A grant of land had been made in advance of the organization of the College in 1873 by the Colorado Springs Company, the founders of the City of Colorado Springs. The Congregational denomination, so famous for building colleges, gave, in the first years of the struggle, warm sanction and helpful guidance. With devotion and a spirit of true piety, they joined in the up-building of the College. Trustees were elected, a charter was secured, and the Rev. Jonathan Edwards became the first professor and executive officer. The authorized announcement for that year contains the following:

"It is the purpose of the Trustees to build a College in which liberal studies may be pursued under positive Christian influences. . . . The College is under no ecclesiastical or political control. Members of different churches are on its Board of Trustees. . . . The character which is most desired for this college is that of thorough scholarship and fervent piety, each assisting the other, and neither ever offered as a compensation for the defects of the other."

From the beginning, the Board of Trustees has been composed of leading professional and business men of Colorado, together with a few Eastern men of similar standing, and has ever been animated by the purpose avowed by the original Board.

The first President, the Rev. James Dougherty, was elected in 1875, and was succeeded in the following year by the Rev. E. P. Tenney. From 1885 to 1888 there was no President, but the work of teaching was carried on without interruption. At this time there was only one building on the campus, now known as Cutler Hall, erected in 1880.

In 1888 William Frederick Slocum was elected President. The faculty was at once enlarged, the courses reorganized, and Cutler Academy* incorporated as an associate preparatory school, in which students have since been trained, not only for Colorado College, but

*Discontinued in June, 1914; Cutler Hall is now used for Engineering courses.

for all the leading institutions of the United States. A residence for the President was purchased. Hagerman Hall was built in 1889. In the same year the Woman's Educational Society was organized and built Montgomery Hall.

The following buildings have been erected since that time: The N. P. Coburn Library, 1894; the Henry R. Wolcott Observatory, 1894; Ticknor Hall, 1897; Perkins Fine Arts Hall, 1900; McGregor Hall, 1903; Palmer Hall, 1903; Bemis Hall, 1908; Cossitt Memorial, 1914; and the Administration Building, a gift acquired in the summer of 1914. The President's residence was remodeled and enlarged in 1903.

In 1903 a Department of Engineering, with Dr. Florian Cajori as Dean, was opened to meet the increasing demand in the Rocky Mountain region for instruction in applied science. The first class was graduated in 1906.

Through the generosity of General William J. Palmer and Dr. W. A. Bell, who in 1905 presented to the College a tract of 10,000 acres of timber land called Manitou Park, the foundation was laid for a Department of Forestry. This work began in 1906, with Dr. William C. Sturgis as Dean.

A Department of Business Administration and Banking was established last year with the special income of \$6,000 a year. The work offered is designed to meet the needs of students preparing for business, banking, foreign exchange, journalism, consular service, and secretarial work. The Department opened in September, 1914, with Professor Warren M. Persons as Dean.

ORGANIZATION OF THE COLLEGE.

Colorado College was incorporated under the general provisions of Section 5, Article 2, of Chapter 18 of the Revised Statutes of the Territory of Colorado. The Charter, dated February 4, 1874, and filed with the Recorder of El Paso County, Colorado, on February 17, 1874, includes the following articles: "FIRST. The corporate name of said corporation shall be The Colorado College. SECOND. The object of this corporation is to locate and maintain at Colorado Springs under Christian auspices an institution of learning on the college or university plan. THIRD. The number of trustees of said corporation shall be not less than twelve nor more than

eighteen. . . . FOURTH. The existence of the said corporation, The Colorado College, is intended to be perpetual."

By a Certificate of Amendment dated June 13, 1907, and filed June 15, 1907 (in the manner prescribed by Chapter 139 of the Session Laws of 1907), to the above articles were added: "FIFTH. Seven of the said trustees present at any meeting shall constitute a quorum, and the Board of Trustees shall have power by vote of a quorum to fill vacancies in the Board. SIXTH. The said corporation shall never be under the control of a sect; no trustee, officer, member of any faculty, or student shall ever be required to belong to any specified sect and no theological test shall ever be imposed or applied as a condition of entrance in said College or of connection therewith."

The College is authorized to confer degrees by Section 1 of an Act of March 28, 1889 (Session Laws of 1889, p. 121), which states that, "Any corporation, now or hereafter existing for educational purposes, under the laws of this State, which shall maintain one or more institutions of learning of the grade of a university or college, shall have authority by its directors or board of trustees or by such person or persons, as may be designated by its constitution or by-laws, to confer such degrees and grant such diplomas and other marks of distinction as are usually conferred and granted by other universities and colleges of like grade."

Trustees

WILLIAM F. SLOCUM, <i>President of the Board</i>	24 College Place
WILLIS R. ARMSTRONG.....	1420 Culebra Ave.
GEORGE W. BAILEY.....	309 McPhee Building, Denver
JUDSON M. BEMIS.....	506 N. Cascade Ave.
IRVING W. BONBRIGHT.....	14 Wall Street, New York
JOHN CAMPBELL.....	1401 Gilpin St., Denver
GEORGE A. FOWLER.....	Broadmoor
IRVING HOWBERT.....	17 N. Weber St.
WILLIAM S. JACKSON.....	228 E. Kiowa St.
WILLIAM LENNOX.....	1001 N. Nevada Ave.
CHARLES M. MACNEILL.....	301 Mining Exchange Building
HENRY McALLISTER, JR.....	1880 Gaylord St., Denver
GEORGE FOSTER PEABODY.....	Lake George, New York
E. P. SHOVE.....	1329 Wood Ave.
PHILIP B. STEWART.....	1228 Wood Ave.
*MAHLON D. THATCHER.....	Hill Crest, Pueblo
FRANK TRUMBULL.....	71 Broadway, New York
WILLIAM M. VANCE.....	1332 Wood Ave.

*Deceased.

Standing Committees of the Trustees

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FINANCE.

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FORESTRY SCHOOL.

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AUDITING.

IRVING HOWBERT, *Chairman*; WILLIAM S. JACKSON, J. M. BEMIS.

INVESTMENTS.

IRVING HOWBERT, *Chairman*; WILLIAM S. JACKSON, J. M. BEMIS, E. P. SHOVE.

The President of the Board is ex-officio member of all committees.

Officers of Administration

WILLIAM FREDERICK SLOCUM, *President.*

EDWARD SMITH PARSONS, *Vice-President.*

ROGER HENWOOD MOTTEN, *Secretary of the College.*

WILLIAM WALLACE POSTLETHWAITE, *Treasurer.*

HARRIETT ARSULA SATER, *Cashier.*

BENNETT & HALL, *Attorneys for the College.*

SECRETARIES.

Secretary to the President, Maude Smith Bard.

Secretary to the Dean of the Department of Arts and Science,
Mrs. Josie Rambo Morrow.

Secretary to the Dean of Women, Beatrice Owens.

Board of Control of the N. P. Coburn Library

Chairman—PRESIDENT SLOCUM.

Secretary—MANLY DAYTON ORMES.

Miss Ellen T. Brinley.

Mrs. Robert Kerr.

Prof. Florian Cajori.

Prof. Edward S. Parsons.

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Mrs. Philip B. Stewart.

Mr. Charles W. Haines.

Rev. Arthur N. Taft.

Mr. Sidford F. Hamp.

Mrs. A. E. Touzalin.

Faculty

WILLIAM FREDERICK SLOCUM, D.D., LL.D. 24 College Place
President and Head Professor of Philosophy.

A.B. (Amherst) '74; B.D. (Andover) '78; LL.D. (Amherst) '93;
LL.D. (Nebraska) '94; D.D. (Beloit) '01; LL.D. (Illinois College)
'04; LL.D. (Harvard) '12; LL.D. (Allegheny and University of Colorado) '15; Colorado College, '88.

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Professor of Mathematics and Astronomy.

PH.B. (Michigan) '99; A.B. (Harvard) '00; A.M. (ibid) '13; Colorado College, '07.

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Registrar.

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*Dean of the Department of Engineering and
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S.B. (Wisconsin) '83; M.S. (ibid) '86; PH.D. (Tulane) '94; LL.D. (University of Colorado) '12; LL.D. (Colorado College) '13; Sc.D. (Wisconsin) '13; Colorado College, '89.

DAVID FALES, JR., A.M., B.D. Plaza Hotel
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 B.C.E. (Iowa State College) '04; Colorado College, '14.
- CLAUDE JAMES ROTHGEB 1211 N. Weber St.
Director of Athletics, and Instructor in Physical Training.
- †
Instructor in Geology.
- LOIS ELLETT SMITH, A.M. McGregor Hall
Instructor in Biology.
 A.B. (Colorado College) '12; A.M. (ibid.) '15; Colorado College, '12.
- KATHERINE DENISE WOLLASTON, PH.B. Bemis Hall
Instructor in French.
 PH.B. (Chicago) '13; Colorado College, '15.

*Deceased.

†Vacancy to be filled.

EDWARD DANFORTH HALE, A.M. 1424 N. Nevada Ave.
Dean of the Department of Music, and Professor of the Theory and Literature of Music and the Pianoforte.

A.B. (Williams) '80; A.M. (ibid.) '83; Professor at the New England Conservatory, '85-'04; Colorado College, '05.

HENRY HOWARD BROWN 1716 Wood Ave.
Instructor in Voice Culture.

Pupil of E. W. Glover (Ass't Director for Cincinnati May Festivals) '00; J. A. Broeckhaven, '00-'01; James Sauvage, '01; Dora Topping, '02-'04; Max Spicker, '03-'06; Amherst Webber (Coach of MM. J. and E. de Reszke, Mmes. Nordica, Eames, and others) '05; Colorado College, '14.

MRS. GEORGE MAXWELL HOWE 1811 N. Nevada Ave.
Instructor in Violin.

Cincinnati Conservatory of Music, '01-'03; Stanton College, Natchez, Miss., '03-'05; Sternsches Konservatorium, Berlin, '05-'06; Woman's College, Columbia, S. C., '06-'07; Colorado College, '10.

LOTA MERRIS. 1815 N. Nevada Ave.
Instructor in Voice Culture and Public School Music.

Colorado College and School of Music, '07-'09; Oberlin Conservatory, '12-'13; Pupil of Oscar Saenger and W. J. Falk, '10; H. Howard Brown, '10-'14; Colorado College, '14.

EXCHANGE PROFESSORS AND LECTURERS.

AT COLORADO COLLEGE.

THOMAS NIXON CARVER, PH.D., LL.D.
Professor of Political Economy at Harvard University.

Exchange Professor of Political Economy in the Second Half Year
 1915-'16.

AT HARVARD UNIVERSITY.

ATHERTON NOYES, A.B.
Professor of English.

Exchange Professor at Harvard University for the Full Year,
 1915-16.

Committees of the Faculty, 1916-1917

Administration—Mr. Slocum, Miss Brown, Mr. Cajori, Mr. Gile, Mr. Hills, Miss Loomis, Mr. Motten, Mr. Parish, Mr. Parsons, Mr. Persons, Mr. Schneider, Mr. Strieby, Mr. Thomas.

Accredited Schools—Mr. Breitwieser, Mr. Motten.

Advanced Degrees—Mr. Hills, Mr. Cajori, Mr. Howe, Mr. Persons, Mr. Schneider.

Athletics—Mr. Schneider, Miss Davis, Mr. Hickox, Miss Loomis, Mr. Moore, Mr. Motten, Mr. Rothgeb, Mr. Thomas.

Catalogue—Mr. Ellingwood, Miss Brown, Mr. Gerlach, Mr. Motten.

Chapel Officer—Mr. Albright.

College Lecture Course—Mr. Woodbridge, Mr. Tileston, Mr. Fales.

Hagerman Hall—Mr. Gerlach, Mr. Baker, Mr. Motten.

Individual Courses—Mr. Cajori, Miss Brown, Miss Loomis, Mr. Motten, Mr. Parsons, Mr. Thomas, Mr. Woodbridge.

Library—Mr. Ormes, Miss Canon, Mr. Parish, Mr. Persons, Mr. Slocum.

Music—Mr. Hale, Mr. Ellingwood, Mrs. Howe, Miss Merris, Mr. Parsons, Miss Sahm.

Publications—Mr. Cajori, Mr. Hills, Mr. Howe, Mr. Schneider, Mr. Slocum.

Publicity—Mr. Howe, Mr. Baker, Mr. Blum, Mr. Parish.

Schedule—Mr. Albright, Mr. Clark, Mr. Parish, Mr. Tileston.

Scholarships—Mr. Slocum, Miss Brown, Mr. Cajori, Mr. Hills, Miss Loomis, Mr. Parsons.

Social Life—Mr. Slocum, Miss Brown, Mr. Hills, Miss Loomis, Mr. Persons, Mr. Schneider.

Student Activities—Mr. Motten, Miss Loomis, Miss Sahm, Mr. Tileston.

Student Self-Help—Mr. Motten, Mr. Ellingwood, Mr. Gerlach.

Class Officers

Senior.....Mr. Slocum

Junior.....Mr. Breitwieser

Sophomore.....Mr. Schneider

Freshman.....Mr. Hills

Special.....Mr. Tileston

Admission

REGISTRATION.

Before registering, each candidate must present to the Dean a certificate of moral character, signed by some responsible person in the community in which he has made his home. School authorities are asked to mail credits direct to the Registrar.

Students are required to register promptly and attend the first exercise in their courses. A fee for late registration will be charged as follows: \$1.00 for registration, first half-year, later than noon on Saturday, September 16, 1916; \$1.00 for registration, second half-year, later than noon on Saturday, January 27, 1917.

ENTRANCE REQUIREMENTS

FOR

COURSES LEADING TO THE DEGREE OF BACHELOR OF ARTS AND THE
DEGREE OF BACHELOR OF ARTS IN BUSINESS ADMIN-
ISTRATION AND BANKING.

1. ENGLISH, 3 units.*
2. HISTORY, 1 unit.
3. MATHEMATICS, 2 units (preferably 3).
4. LATIN, FRENCH, GERMAN or SPANISH, 4 units, of which 2 must be Latin.†
5. SCIENCE, 2 units (to be selected from the list of sciences given below in 6; but the student is advised to offer Chemistry and Physics. If the student offers Greek, only one unit of science is required).
6. ELECTIVES, sufficient to make a total of 15 units.
English, 1 unit.
Greek, 1, 2, or 3 units.
German, 1 or 2 units.
French, 1 or 2 units.
Spanish, 1 or 2 units.

*A unit is a course covering a school year of not less than 35 weeks, with 4 or 5 periods of at least 45 minutes each a week. Only one unit of deficiency is allowed for entrance.

†If a student has not taken preparatory Latin, but brings 15 other units of acceptable work, he will be allowed to begin Latin in college, the work counting toward his degree.

Mathematics, 1 unit.
History, 1 or 2 units.
Civil Government, $\frac{1}{2}$ unit.
Chemistry, 1 unit.
Physics, 1 unit.
Physiology, $\frac{1}{2}$ unit.
Zoology, $\frac{1}{2}$ unit.
Botany, $\frac{1}{2}$ unit.
Physiography, $\frac{1}{2}$ unit.
Geology, $\frac{1}{2}$ unit.
Mechanical Drawing, 1 unit.

ENTRANCE REQUIREMENTS

FOR

COURSES LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN ENGINEERING AND THE DEGREE OF FOREST ENGINEER.

(15 UNITS.)

The requirements for admission to the engineering courses are as follows:

1. MATHEMATICS (3 units)—(a.) Algebra through simultaneous quadratic equations; (b.) Elementary Plane Geometry; (c.) Solid and Spherical Geometry; (d.) Review Algebra, Ratio and Proportion, Binomial Theorem, Arithmetical and Geometrical Progressions, Elements of Permutations and Combinations. Plane Trigonometry is desirable but not necessary. A thorough preparation is of great importance.
2. PHYSICS (1 unit)—One year's course. See p. 27.
3. CHEMISTRY (1 unit)—One year's course. See p. 28.
4. ENGLISH (3 units)—As in the College of Arts. See p. 23.
5. FOREIGN LANGUAGES (2 units)—Two years. See p. 26.
6. AMERICAN, AND ENGLISH OR ANCIENT HISTORY (1 unit)—One year's course in each. See p. 25.
7. ELECTIVES (4 units)—Preferably in modern languages and History. See pp. 25-26.

Students who have had a high school course in trigonometry may receive advanced standing in this subject in the Department of

Engineering by passing an examination at the beginning of the college year.

UNIT COURSES IN PARTICULAR SUBJECTS.

1. ENGLISH—(3 units).

- (a) A practical knowledge of grammar and the elements of rhetoric.
- (b) A careful study of the following works, recommended by the Conference on Uniform Entrance Requirements in English, from the point of view of explanation of allusions, meanings of unusual words, acquaintance with the periods of literary history represented, etc., as well as that of subject matter, structure, and literary quality:

Shakespeare's *Macbeth*; Milton's *Comus*, *L'Allegro*, and *Il Penseroso*; Burke's *Speech on Conciliation with America*, or Washington's *Farewell Address* and Webster's *First Bunker Hill Oration*; Macaulay's *Life of Johnson*, or Carlyle's *Essay on Burns*.

- (c) A less minute study of the following works, sufficient to give the candidate a clear idea of their important parts:

READING.—Group I. (Two to be selected): *The Old Testament*, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther; Homer's *Odyssey*, with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII; Homer's *Iliad*, with the omission, if desired, of books XI, XIII, XIV, XV, XVII, XXI; Vergil's *Aeneid*. The *Odyssey*, *Iliad*, and *Aeneid* should be read in English translations of recognized literary excellence. *For any unit of this group a unit from any other group may be substituted.*

Group II. (Two to be selected): Shakespeare's *Merchant of Venice*, *Midsummer Night's Dream*, *As You Like It*, *Twelfth Night*, *Henry the Fifth*, *Julius Cæsar*.

Group III. (Two to be selected): Defoe's *Robinson Crusoe*, Part I; Goldsmith's *Vicar of Wakefield*; Scott's *Ivanhoe*, or *Quentin Durward*; Hawthorne's *The House of the Seven Gables*; Dickens's *David Copperfield*, or *Tale of Two Cities*; Thackeray's *Henry Esmond*; Mrs. Gaskell's *Cranford*; George Eliot's *Silas Marner*; Stevenson's *Treasure Island*.

Group IV. (Two to be selected): Bunyan's *Pilgrim's Progress*, Part I; The *Sir Roger de Coverley Papers* in the *Spectator*; Franklin's *Autobiography*, (condensed); Irving's *Sketch Book*; Macaulay's *Essay on Lord Clive*, and *Essay on Warren Hastings*; Thackeray's *English Humourists*; *Selections from Lincoln*, including at least the two *Inaugurals*, and the *Speeches in Independence Hall* and at *Gettysburg*, *Last Public Address*, *Letter to Horace Greeley*, together with a brief memoir or estimate; Parkman's *Oregon Trail*; Thoreau's *Walden*, or Huxley's *Autobiography*, and *Selections from Lay Sermons*, including the addresses on *Improving Natural Knowledge*, *A Liberal Education*, and *A Piece of Chalk*; Stevenson's *Inland Voyage*, and *Travels With a Donkey*.

Group V. (Two to be selected): Palgrave's *Golden Treasury* (First Series) Books II and III, with especial attention to Dryden, Collins, Gray, Cowper, and Burns; Gray's *Elegy in a Country Churchyard*, and Goldsmith's *Deserted Village*; Coleridge's *Ancient Mariner*, and Lowell's *Vision of Sir Launfal*; Scott's *Lady of the Lake*; Byron's *Childe Harold*, Canto IV, and *The Prisoner of Chillon*; Palgrave's *Golden Treasury* (First Series) Book IV, with especial attention to Wordsworth, Keats, and Shelley; Poe's *Raven*; Longfellow's *Courtship of Miles Standish*, and Whittier's *Snow Bound*; Macaulay's *Lays of Ancient Rome*, and Arnold's *Sohrab and Rustum*; Tennyson's *Gareth and Lynette*, *Lancelot and Elaine*, and *The Passing of Arthur*; Browning's *Cavalier Tunes*, *The Lost Leader*,

How They Brought the Good News from Ghent to Aix, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, Hervé Riel, Pheidippides, My Last Duchess, and Up at a Villa—Down in the City.

Although the books mentioned above are recommended as preparation for this part of the requirement, they are not prescribed. Books of equal merit, covering a similar range of literary types, will be accepted as equivalents.

2. HISTORY—(1 unit). An outline knowledge of the leading facts of either Ancient, Greek and Roman, Mediaeval and Modern, American, or English History.

- (a) Ancient History. Myers and Botsford, Myers, West, or an equivalent.
- (b) Greek and Roman: Botsford, Allen, or an equivalent.
- (c) Mediaeval and Modern: Myers, or an equivalent.
- (d) American: Channing, McLaughlin, Thomas, Johnston, or an equivalent.
- (e) English: Larned, Coman and Kendall, or an equivalent.

3. MATHEMATICS—(2 or 3 units.)

- (a) Algebra, through simultaneous quadratic equations ($1\frac{1}{2}$ units).
- (b) Elementary Plane Geometry; the first five books of Phillips and Fisher's, Wells's, or Wentworth's *Geometry*, or an equivalent (1 unit).
- (c) Solid and Spherical Geometry ($\frac{1}{2}$ unit).
- (d) Plane Trigonometry ($\frac{1}{2}$ unit).

It is recommended that Algebra and Plane Geometry be reviewed in the last year of the preparatory course.

4. LATIN—

- (a) An accurate and ready knowledge of grammatical forms. *Cæsar's Gallic Wars*, Bks. I.-IV., or an equivalent. Prose Composition based on Cæsar. Careful attention should be given from the beginning to correct pronunciation of the Latin and to the use of idiomatic English in translation. (2 units.)
- (b) Cicero: Seven orations. The following are recommended: The four orations against Catiline, Archias, the Manilian Law, Marcellus. Translation at sight of easy passages of prose. Prose Composition. (1 unit.)
- (c) Vergil: *Aeneid*, Bks. I.-VI. Prose Composition based on Cicero. (1 unit.)

5. GREEK—

- (a) White's First Greek Book, or an equivalent. Xenophon's *Anabasis* (20 or 30 pages). Practice in sight translation. The rules of accentuation. (1 unit.)
- (b) Four books of the *Anabasis*. Reading at sight. Prose Composition based on the *Anabasis*. Careful grammatical study. (1 unit.)
- (c) Three books of the *Iliad* with prosody and dialectic forms. Sight translation. Prose Composition. (1 unit.)

6. GERMAN, FRENCH, AND SPANISH—(1 or 2 units).

- (a) The work of the first year should comprise: (1) Drill in the rudiments of grammar; (2) careful drill in pronunciation; (3) the memorizing and frequent repetition of easy colloquial sentences; (4) abundant easy exercises; (5) the reading in graduated texts of from 75 to 100 pages of German, or from 100 to 175 pages of French or Spanish prose.
- (b) The work of the second year should comprise: (1) The careful reading of from 150 to 200 pages of German literature, or from 250 to 400 pages of French or Spanish literature, in the form of easy stories or his-

torical or biographical sketches; (2) practice in the translation, from English, of easy variations from the matter read, and also in free reproduction, sometimes orally and sometimes in writing, of the substance of short and easy selected passages; (3) continued drill in the rudiments of grammar.

A good selection of texts for the second year, arranged in suitable order for reading, would be:

GERMAN: Andersen, *Märchen* or *Bilderbuch*; Leander, *Träumereien*; Hauff, *Das kalte Herz*; Zschokke, *Der zerbrochene Krug*; Hillern, *Höher als die Kirche*; Storm, *Immensee*; Baumbach, *Der Schweiger-sohn*; Heyse, *L'Arrabiata*, *Das Mädchen von Treppi*, *Anfang und Ende*; Jensen, *Die Braune Erica*.

FRENCH: (1) Mairet, *la Tâche du petit Pierre*; Malot, *Sans famille*, or Bruno, *le Tour de la France*; (2) Labiche et Martin, *le Voyage de M. Perrichon*; Halévy, *l'Abbé Constantin*, or Mérimée, *Colomba*; (3) Dumas, *la Tulipe noire*, or Erckmann-Chatrian, *Madame Thérèse*; (4) Sarcey, *le Siège de Paris*, or Lamartine, *Jeanne d'Arc*; (5) Daudet, *Contes*, or George Sand, *la Mare au diable*.

SPANISH: (1) Valera, *El pájaro verde*, and Alarcón, *El Capitán Veneno*, or about 150 pages of selected short stories; (2) Pérez Galdós, *Doña Perfecto* or *Marianela*; (3) Echegaray, *Ó locura ó santidad*, Ramos y Vidal, *Zaragüeta*, or Moratín, *El sí de las niñas*.

A third and a fourth year of German or French will be accepted as an elective entrance subject, if the work has been done satisfactorily. Candidates are advised to present two units of German, French or Spanish, as preparatory to admission to the German 2, French 2, or Spanish 2, given in the college.

7. PHYSICS—(1 unit). No less than two hours a week of recitation and four of laboratory work; Millikan and

Gale's *First Course in Physics*; Carhart and Chute's *Elements of Physics*, or an equivalent.

8. CHEMISTRY—(1 unit). Williams' *Elements of Chemistry* or an equivalent.
9. PHYSIOLOGY—($\frac{1}{2}$ unit). Text book work should cover such a text as Blaisdell's *Practical Physiology*. In addition, the course should include a rough dissection, by the teacher, of the frog and cat, and a microscopic examination of the more important tissues.
10. ZOOLOGY—($\frac{1}{2}$ unit) Textbook work equal in amount to that contained in Kellogg, Jordan, or Davenport; laboratory work on the structure of at least ten forms and a comparison with other types. The drawings and descriptions in the candidate's laboratory notebook must be certified by the teacher.
11. BOTANY—($\frac{1}{2}$ unit). A knowledge of the structure and more important physiological processes of flowering plants, of the modifications of parts for special functions, of the plant societies, of pollination and dissemination. It is also desirable that the candidate have the ability to identify ordinary seed plants. A laboratory notebook certified by the teacher must be presented by the candidate. Such texts as Bergen's *Foundation of Botany* and Coulter's *Plant Studies* are recommended.
12. PHYSIOGRAPHY—($\frac{1}{2}$ unit). Tarr, Davis, Dryer, or an equivalent.
13. GEOLOGY—($\frac{1}{2}$ unit). Scott's *Introduction to Geology*, or an equivalent, with practice in the determination of the commoner rocks, igneous, sedimentary, and metamorphic.
14. MECHANICAL DRAWING—(1 unit).

ADMISSION BY CERTIFICATE.

Candidates who offer satisfactory evidence of having completed a preparatory course equivalent to the above requirements

will be admitted without condition into the Freshman Class. Each candidate must bring from the principal of the school last attended a personal statement as to his grade of scholarship.

ACCREDITED SCHOOLS.

The following schools are on the accredited list. A certificate of the satisfactory completion, in any of them, of any study required for admission to the College, will be accepted:

Alamosa High School.	Greeley High School.
Arvada High School.	Gunnison High School.
Aspen High School.	Holly High School.
Cañon City High School.	Holyoke High School.
Cañon City So. Side High School.	Idaho Springs High School.
Central City High School.	La Junta High School.
Cheyenne County High School.	Lamar High School.
Cheyenne (Wyo.) High School.	Las Vegas, (N.M.) High School.
Colorado City High School.	Leadville High School.
Colorado Springs High School.	Littleton High School.
Cripple Creek High School.	Longmont High School.
Del Norte High School.	Loveland High School.
Delta High School.	Manitou High School.
East Denver High School.	Manzanola High School.
North Denver High School.	Monte Vista High School.
West Denver High School.	Montrose High School.
South Denver High School.	Ogden, Utah, High School.
Denver Manual Training H. S.	Ouray High School.
Douglas Co. H. S., Castle Rock.	Palisades High School.
Durango High School.	Paonia High School.
Eaton High School.	Pueblo High School, Dist. No. 1.
Florence High School.	Pueblo High School, Dist. No. 20.
Fort Collins High School.	Rocky Ford High School.
Fort Morgan High School.	Rowland Hall, Salt Lake City.
Fountain High School.	Saguache Co. High School.
Fruita High School.	Salida High School.
Georgetown High School.	Salt Lake City High School.
Glenwood Springs High School.	State Teacher's College H. S.
Golden High School.	Sterling High School.
Grand Junction High School.	St. Stephen's Academy.

Telluride High School.

Trinidad High School.

Victor High School.

Walsenburg High School

Wheat Ridge High School, Alcott.

Miss Wolcott's School, Denver.

Windsor High School.

Certificates from schools not on the accredited list will be considered as the merits of each case may warrant.

ADMISSION TO ADVANCED STANDING.

Students who offer satisfactory evidence of having completed studies equivalent to those offered by the College will be received into advanced classes. The Faculty usually receive certificates from other colleges, but reserve the right to examine any candidate. All credits should be mailed to the Registrar.

SPECIAL STUDENTS.

Special students will be received, at the discretion of the Faculty, into such classes as they are qualified to enter. It is the rule of the College that such students must attend the examinations as well as the ordinary recitations of their classes, subject to the same conditions as other students.

Several of the courses of lectures which form part of the College instruction are open to the public on payment of a fee of \$5.00 for each half-year course (see p. 143), and without any requirements of examination.

REQUIREMENTS FOR DEGREES

GENERAL RULES.

The credit unit in all courses is one hour a week for a half-year. In courses continuing throughout the year, no credit is given for a half-year's work except by vote of the committee on individual courses and with the approval of the head of the department concerned. To be credited as passing work, a course must be graded at least 60%. No student will be allowed to take a degree from Colorado College who has not been a resident in the institution for at least one full year. No credit is allowed for work done out of course or in absentia, except with the permission of the committee on individual courses; such permission must be obtained in advance.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS.

In the Department of Arts and Sciences, only one degree is given, that of Bachelor of Arts. To secure this the student is required to complete a course of study consisting of (1) certain prescribed studies, (2) a specified number of hours in a major subject, (3) enough free electives to bring his work up to the total requirement of 120 hours of scholastic work, making an average of 15 hours a week throughout the four years.* In addition he is further required to complete 6 hours' work in Physical Education (pp. 95-98). To satisfy the requirements for the degree of Bachelor of Arts, a student must obtain a grade above 69% in at least one-half the hours taken in Colorado College. It is recommended that students who are planning to work their way, in large part, through College, take five years for their course.

*Except in the course leading to the degree of Bachelor of Arts in Business Administration and Banking (see p. 34).

I. REQUIRED SUBJECTS.

Economics, History or Political Science.—Six units in one of these subjects must be completed by the end of the Junior year.

English.—English 1; Freshman year, 3 hours. English 2; first half of Sophomore year, 3 hours. A literature course to be selected from English 4, 5, 9, 12, 13, 16, 17 and 19; second half of Sophomore year, 3 hours.

Foreign Languages.—Six units in foreign languages should be completed by the end of the Sophomore year.

Mathematics.—Mathematics 1; first half, Freshman year, 3 hours. Mathematics 2 and 3; second half, Freshman year, 5 hours. Students offering Solid Geometry for admission are not required to take Mathematics 2.

Philosophy.—Philosophy 1; Junior year, 3 hours; this should be taken in the Sophomore year by students intending to take their majors in Philosophy or Education. Philosophy 2 and 3; Senior year, 4 hours.

Physical Education.—Freshman year, 3 hours a week, credit 1 hour each half-year. Sophomore and Junior years, 2 hours a week, credit 1 hour each half-year.

Science.—Six units in either Biology, Chemistry or Physics should be completed by the end of the Sophomore year.

II. REQUIREMENTS ARRANGED BY YEARS.

FRESHMAN YEAR.

<i>First Half-Year.</i>	Unit credits	<i>Second Half-Year.</i>	Unit credits
English 1, p. 76.....	3	English 1, p. 76.....	3
Foreign Language (see above)	3	Foreign Language.....	3
Mathematics 1, p. 90.....	3	Mathematics 2 and 3, or 3 (see above) p. 90.....	5 or 3
Physical Education, p. 95.....	1	Physical Education, p. 95.....	1
Science (see above).....	3	Science	3
Elective	3	Elective.....	1 or 3
	<hr/> 16		<hr/> 16

SOPHOMORE YEAR.

<i>First Half-Year.</i>	Unit credits	<i>Second Half-Year.</i>	Unit credits
Economics, History or Political Science, (see above)	3	Economics, History or Political Science.....	3
English 2; p. 76.....	3	course (see above).....	3
Foreign Language (if re- quirement is not com- pleted in the Freshman year)	3	English, a literature	
Physical Education, p. 95.....	1	Foreign Language.....	3
Science (if not taken in the Freshman year).....	3	Physical Education, p. 95.....	1
Elective	3	Science	3
		Elective	3
	16		16

JUNIOR YEAR.

<i>First Half-Year.</i>	Unit credits	<i>Second Half-Year.</i>	Unit credits
Economics, History or Political Science (if not completed in the Sophomore year).....	3	Economics, History or Political Science.....	3
Philosophy 1, p. 92.....	3	Philosophy 1, p. 92.....	3
Physical Education, p. 95.....	1	Physical Education, p. 95.....	1
Electives	9	Electives	9
	16		16

SENIOR YEAR.

<i>First Half-Year.</i>	Unit credits	<i>Second Half-Year.</i>	Unit credits
Philosophy 2, p. 92.....	4	Philosophy 3, p. 93.....	4
Electives	11	Electives	11
	15		15

MAJOR SUBJECT.

In addition to the above prescribed subjects, each student shall select a major subject, if possible before the end of the Sophomore year, and, in any case, not later than the beginning of the Junior year. The professor in charge of the major subject will act as the student's adviser, and will have authority, with the Dean, to require

the completion of work amounting to 30 hours in the major subject, or in the major subject and in such minor subjects as he shall consider necessary, or in collateral work. Mention of the major subject will be made in the diploma. No work done in Colorado College will be counted toward the completion of a major subject if the grade is below C (70).

Any one of the following may be selected by the student as his major subject: (1) Art; (2) Art and Music;* (3) Astronomy; (4) Bible and Religion; (5) Biology; (6) Chemistry; (7) Economics; (8) Education; (9) English; (10) Geology; (11) German; (12) Greek; (13) History; (14) Latin; (15) Mathematics; (16) Philosophy; (17) Physics; (18) Romance Languages.

All courses except Economics 1, English 1, French 1, German 1, Mathematics 2, and Spanish 1, may be counted as part of the requisite 30 hours.

Petitions to change the major subject will be granted only when approved by the professors in charge of both the old and the new subjects; and the student will be held to all the requirements of the new major subject. In no case may the major subject be changed later than the beginning of the Senior year.

ELECTIVES.

The student shall elect, in addition to the prescribed subjects and the major subject, a sufficient number of courses to bring the total amount of his College work up to 120 hours (except in Business Administration; see p. 34).

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS IN BUSINESS ADMINISTRATION AND BANKING.

The four years' course leading to the degree of Bachelor of Arts in Business Administration and Banking is designed to offer a thorough training in those branches of knowledge fundamental to business, using that term in its broadest sense. It is the aim of the Judson M. Bemis Department of Business Administration and Banking to emphasize those fundamental facts and principles of business which are necessary to its administration, but which are

*See p. 114.

difficult or impossible to acquire in the ordinary routine of work in a complex business organization. The aim is, not to train students in business routine, but to instruct them so that when they enter business they will understand the significance of the work that they happen to be doing in its relation to the whole. A training in economics, finance, law, accounting, insurance, advertising and the like, familiarity with business terms, the reading of commercial journals, and the daily discussion of banking and industrial topics will enable the student to make the transition from college to business more readily than he otherwise could.

The requirements for the degree of Bachelor of Arts in Business Administration and Banking are the same as those for the regular degree of Bachelor of Arts (including the requirements for Physical Education, p. 95) except as follows: Business 12 is required in the Freshman year instead of Mathematics 3; Economics 1 is required in the Sophomore year in addition to the other requirements (see p. 32); and 68 half-year hours are required to the Junior and Senior years, of which 55 half-year hours are prescribed. For the degree from the Department a standing of C or more is required in thirty hours of the required work in Economics, Political Science and Business included in which must be Business 1 and 5 and either Business 6 or Business 9 and 10.

In planning the course certain considerations have been kept in mind, i. e., to prevent over-specialization by broad requirements in the Freshman and Sophomore years; to develop a professional spirit among the Juniors and Seniors by requiring greater specialization than obtains under the system of major studies; to secure the elasticity necessary because of the diverse needs of the students by means of options and free electives. Thus, a student planning to enter journalism should elect courses in English, history, and political science; one intending to enter the consular service should elect modern languages, political science, and law; for banking he should elect Economics 10, Business 9 and 10; for actuarial and statistical work he should elect mathematics and Economics 19; for mercantile and manufacturing pursuits he should elect Business 6. Other combinations will suggest themselves to those preparing for chamber of commerce secretaryships, teaching of commercial branches in high schools, etc.

FRESHMAN YEAR.

<i>First Half-Year.</i>	Credit hours per week	<i>Second Half-Year.</i>	Credit hours per week
English 1, p. 76.....	3	Business 12 and Mathemat-	
Mathematics 1, p. 90.....	3	ics 2, pp. 57 and 90.....	5 or 3
Modern Language.....	3	English 1, p. 76.....	3
Physical Education, p. 95.....	1	Modern Language.....	3
Science	3	Physical Education, p. 95.....	1
Elective	3	Science	3
		Elective.....	1 or 3
	<u>16</u>		<u>16</u>

SOPHOMORE YEAR.

<i>First Half-Year.</i>	Credit hours per week	<i>Second Half-Year.</i>	Credit hours per week
Economics 1, p. 68.....	3	Economics 1, p. 68.....	3
English 31, p. 77.....	3	English	3
Modern Language.....	3	Modern Language.....	3
Physical Education, p. 95.....	1	Physical Education, p. 95.....	1
Electives	6	Electives	6
	<u>16</u>		<u>16</u>

JUNIOR YEAR.

<i>First Half-Year.</i>	Credit hours per week	<i>Second Half-Year.</i>	Credit hours per week
Accounting (Bus. 1) p. 57.....	3	Accounting (Bus. 1) p. 57.....	3
Commercial Development		Commerce and Industries	
(Econ. 21) p. 68.....	3	(Bus. 3) p. 57.....	3
Commercial Law		Commercial Law	
(Bus. 5) p. 58.....	3	(Bus. 5) p. 58.....	3
Elements of Political Science		Money and Banking	
(Pol. Sci. 1) p. 101.....	3	(Econ. 9) p. 69.....	3
Physical Education, p. 95.....	1	Physical Education, p. 95.....	1
Transportation (Bus. 7) p. 58		Public Finance (Econ. 10) p. 69	
or		or	
Insurance (Econ. 19) p. 69.....	3	Labor (Econ. 22) p. 70.....	3
Elective	2	Elective	2
	<u>18</u>		<u>18</u>

SENIOR YEAR.

<i>First Half-Year.</i>	Credit hours per week	<i>Second Half-Year.</i>	Credit hours per week
Relation of Legislation to Economics (Bus. 15) p. 59....	2	Advanced Accounting (Bus. 14) p. 57.....	2
Business Organization (Bus. 6) p. 58		Investments and Speculation (Bus. 10) p. 59.....	3
or		Commercial Law (Bus. 13) p. 58.....	2
Banking Practice (Bus. 9) p. 59.....	3	Corporation Finance (Bus. 4) p. 57.....	3
Commercial Law (Bus. 13) p. 58.....	2	Ethics (Phil. 3) p. 93.....	4
History of Philosophy (Phil 2) p. 92.....	4	Elective	3
Statistics (Econ. 18) p. 69.....	3		
Elective	3		
	<hr/>		<hr/>
	17		17

REQUIREMENTS FOR THE DEGREES OF BACHELOR OF SCIENCE IN CIVIL AND IRRIGATION ENGINEERING

CIVIL ENGINEERING.†

The four years' course leading to the degree of Bachelor of Science in Civil Engineering is designed to afford a thorough analytical training as well as numerous and extended practical exercises in those matters that pertain to the profession of the civil engineer, including all kinds of structures and public works, and also the various developments and applications of power by the use of electric, steam, water, and air motors.

The theoretical portion of the instruction is based largely upon the courses given in the departments of mathematics and physics, and the results obtained are applied to practical engineering work. Special stress is laid upon the design by the student of the various structures and machines which the civil engineer is called upon to construct in the practice of his profession.

The instruction is given by lectures, demonstrations by the student, and frequent conferences, co-ordinate with which the work of design is carried on. It covers comprehensively the subjects of surveying, water supply of cities and towns, irrigation, sanitary engineering, including sewage disposal, graphic and analytic treatment

†The requirements for Physical Education are the same as in the Department of Arts and Sciences, p. 95.

of all metallic structures, foundations, retaining and reservoir walls, high masonry dams, sewer systems, hydraulic engineering, rivers and harbors, hydraulic, steam, and electric motors.*

FRESHMAN YEAR.

<i>First Half-Year.</i>	Credit hours per week	<i>Second Half-Year.</i>	Credit hours per week
Algebra (Math. 1) p. 90.....	4	Advanced Chemistry (Chem. 2) p. 59.....	3
Advanced Chemistry (Chem. 2) p. 59.....	3	Descriptive Geometry (Graphics 2) p. 86.....	5
Descriptive Geometry (Graphics 2) p. 86.....	1	Modern Language.....	3
Mechanical Drawing (Graphics 1) p. 85.....	2	Physical Education, p. 95.....	1
Modern Language.....	3	Plane Surveying (Civil 1) p. 62.....	2
Physical Education, p. 95.....	1	Rhetoric and Composition (English 1) p. 76.....	3
Rhetoric and Composition (English 1) p. 76.....	3	Trigonometry (Math. 3) p. 90.....	4
Woodwork (Shop 1) p. 106.....	2		

Summer Course in Surveying (Civil 201), p. 67, four weeks in Manitou Park, credit 4 hours.

SOPHOMORE YEAR.

<i>First Half-Year.</i>	Credit hours per week	<i>Second Half-Year.</i>	Credit hours per week
Analytical Geometry (Math. 4) p. 91.....	3	Analytical Geometry (Math. 5) p. 91.....	2
Differential Calculus (Math. 6) p. 91.....	3	Integral Calculus (Math. 6) p. 91.....	4
Experimental Physics (Phys. 5) p. 99.....	2	General Physics (Phys. 4) p. 99.....	3
General Physics (Phys. 2) p. 99.....	3	Experimental Physics (Phys. 6) p. 99.....	1
Machine Design (Graphics 3) p. 86.....	2	Precision of Measurements (Phys. 8) p. 100.....	1
Modern Language.....	2	Graphic Statics (Graphics 4) p. 86.....	2
Physical Education, p. 95.....	1	Modern Language.....	2
		Forging (Shop 3) p. 106.....	1
		Field Astronomy (Civil 2) p. 62.....	3
		Physical Education, p. 95.....	1

*For ease in reference, associated courses in the departments of Civil Engineering, Irrigation Engineering, and the Summer School of Surveying, as listed on pp. 62-68, are numbered to indicate such association (1, 21, 201, etc.), a group of ten numbers being assigned for each general subdivision.

JUNIOR YEAR.

<i>First Half-Year.</i>	Credit hours per week	<i>Second Half-Year.</i>	Credit hours per week
Advanced Surveying (Civil 5) p. 63.....	2	Resistance of Materials (Civil 81) p. 66.....	2
Geology 1, p. 82.....	3	Power Plants (Electrical 15) p. 75.....	2
Hydraulics (Civil 41) p. 65.....	2	Physical Education, p. 95.....	1
Hydraulic Laboratory (Civil 42) p. 65.....	2	Mechanics (Math. 12) p. 61....	3
Masonry (Civil 31) p. 64.....	2	Railway Engineering (Civil 21) p. 63.....	3
Mechanics (Math. 12) p. 91....	3	Stresses (Civil 83) p. 67.....	3
Physical Education, p. 95.....	1	Testing Laboratory (Civil 82) p. 67.....	1
Railway Curves (Civil 20) p. 63.....	2		
Resistance of Materials (Civil 81) p. 66.....	3		
Thermodynamics (Electrical 16) p. 75.....	2		

SENIOR YEAR.

<i>First Half-Year.</i>	Credit hours per week	<i>Second Half-Year.</i>	Credit hours per week
Bridge Design (Civil 84) p. 67	3	Bridge Design (Civil 84) p. 67	4
Elementary Law (Bus. 5) p. 58.....	3	Irrigation (Civil 51) p. 65.....	3
Electrical Engineering (Electrical 14) p. 74.....	3	Sanitary Engineering (Civil 62) p. 66.....	2
Economics (Econ. 1) p. 68.....	3	Roads and Parks (Civil 71) p. 66.....	2
Foundations (Civil 33) p. 65....	2	Electrical Engineering (Electrical 14) p. 74.....	3
Railway Economics (Civil 22) p. 64.....	2	Thesis.	
Reinforced Concrete (Civil 32) p. 64.....	2		
Water Supply (Civil 61) p. 66	3		
Thesis.			

INSPECTION TRIP.

IRRIGATION ENGINEERING.

In order to meet the demands for men trained in the design, location, and construction of irrigation works, a special course in irrigation engineering is offered. The first year of this course is the same as in the Civil Engineering course; the second, third and fourth years differ from the regular Civil Engineering Course in the substitution of those subjects that bear more directly upon irrigation problems, such as special work in agricultural chemistry,

soil physics, advanced work in hydraulics, and the design of stone, timber, and steel irrigation structures. The full equipment of the Civil Engineering department, including surveying instruments, testing machines, hydraulic laboratory and maps and plans, is available to the students of Irrigation Engineering.

The course differs from that in Civil Engineering in the following respects:

SOPHOMORE YEAR.—Civil 2 and Graphics 4 are omitted and Agricultural Chemistry (Chem. 8) is taken during the year.

JUNIOR YEAR.—During the second half-year, Irrigation (Civil 51) and Geology 1 replace Railway Engineering (Civil 21).

SENIOR YEAR.—During the second half-year, Hydraulic Engineering (Civil 43), and Meteorology take the place of Roads and Parks (Civil 71), and Railway Economics (Civil 22).

[The requirements for admission to courses in Civil and Irrigation Engineering are given on page 22. For description of laboratories, see page 127. For Physical Education, see p. 95.]

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING.*

The study of electricity begins in the Sophomore year, when, in the physics course, the student learns the fundamental phenomena of electricity and magnetism, the quantitative statement in mathematical form of their relations; and performs in the laboratory basic experiments which illustrate these phenomena and impress upon the mind the quantitative relations. In the Junior year the experiments are of a more technical and commercial character. The theory is studied in more detail and with the use of the calculus. Particular attention is given in this year to commercial measuring instruments, and to direct-current machines. A portion of the work is performed in accordance with the "preliminary report system," under which the student, from the general principles imparted in the theoretical courses, writes and receives back corrected, before performing a test, a critical statement of the theory and laboratory method of the test to be performed. In the Junior year are also

*The requirements for Physical Education are the same as in the Department of Arts and Sciences, p. 95.

given most of those courses like steam engineering and hydraulic engineering, without which the training of the electrical engineer would be too narrow for practical purposes. In the Senior year the preliminary report system is followed entirely; and the emphasis is placed upon alternating currents, questions of transmission and distribution, and engineering questions of cost.

A certain amount of reading in history, literature and popular science is required during each summer vacation in the course.

FRESHMAN YEAR.

<i>First Half-Year.</i>	Credit hours per week	<i>Second Half-Year.</i>	Credit hours per week
Advanced Chemistry (Chem. 2) p. 59.....	3	Advanced Chemistry (Chem. 2) p. 59.....	3
Algebra (Math. 1) p. 90.....	4	Descriptive Geometry (Graphics 2) p. 86.....	5
Drawing (Graphics 1) p. 85.....	2	Forging (Shop 3) p. 106.....	1
Descriptive Geometry (Graphics 2) p. 86.....	1	Modern Language.....	3
Modern Language.....	3	Pattern-Making (Shop 2) p. 106.....	1
Physical Education, p. 95.....	1	Physical Education, p. 95.....	1
Rhetoric and Composition (English 1) p. 76.....	3	Rhetoric and Composition (English 1) p. 76.....	3
Woodwork (Shop 1) p. 106....	2	Trigonometry (Math. 3) p. 90.....	4

SOPHOMORE YEAR.

<i>First Half-Year.</i>	Credit hours per week	<i>Second Half-Year.</i>	Credit hours per week
Analytical Geometry (Math. 4) p. 91.....	3	Analytical Geometry (Math. 5) p. 91.....	2
Differential Calculus (Math. 6) p. 91.....	3	Experimental Physics (Phys. 6) p. 99.....	2
Experimental Physics (Phys. 5) p. 99.....	2	General Physics (Phys. 4) p. 99.....	3
General Physics (Phys. 3) p. 99.....	3	Integral Calculus (Math. 6) p. 91.....	4
Machine Design (Graphics 3) p. 86.....	2	Mechanism (Graphics 5) p. 86	2
Modern Language.....	2	Machine Shop (Shop 4) p. 107	1
Physical Education, p. 95.....	1	Modern Language.....	2
Qualitative Analysis (Chem. 3) p. 61.....	3	Physical Education, p. 95.....	1
		Precision of Measurements (Phys. 8) p. 100.....	1
		Qualitative Analysis (Chem. 4) p. 61.....	3

JUNIOR YEAR.

<i>First Half-Year.</i>	Credit hours per week	<i>Second Half-Year.</i>	Credit hours per week
Advanced Electrical Lab (Electrical 3) p. 72.....	2	Alternating-Current Theory (Electrical 2) p. 72.....	3
Elements of Elect. Eng. (Electrical 1) p. 72.....	4	Direct Current Elect. Eng. Lab. (Electrical 8) p. 73.....	3
Economics (Econ. 1) p. 68.....	3	Electrical Measuring Instru- ments (Electrical 6) p. 73....	1
Hydraulics (Civil 41) p. 65....	2	Machine Work (Shop 5) p. 107.....	1
Mechanics (Math. 12) p. 91....	3	Mechanics (Math. 12) p. 91....	3
Physical Education, p. 95.....	1	Physical Education, p. 95.....	1
Resistance of Materials (Civil 81) p. 66.....	3	Power Plants (Electrical 15) p. 75.....	2
Thermodynamics (Electrical 16) p. 75.....	2	Resistance of Materials (Civil 81) p. 66.....	2
		Surveying (Civil 7) p. 63.....	1
		Testing Laboratory (Civil 82) p. 67.....	1

SENIOR YEAR.

<i>First Half-Year.</i>	Credit hours per week	<i>Second Half-Year.</i>	Credit hours per week
Alternating-Current Machin- ery (Electrical 5) p. 72.....	3	Alternating-Current Machin- ery (Electrical 5) p. 72.....	3
Alternating-Current Elect. Eng. Lab. (Electrical 11) p. 74.....	3	Alternating-Current Elect. Eng. Lab. (Electrical 11) p. 74.....	2
Alternating-Current Instru- ments (Electrical 7) p. 73....	1	Electrical Engineering (Electrical 10) p. 74.....	2
Alternating-Current Measure- ment (Electrical 4) p. 72....	1	Electrical References (Electrical 13) p. 74.....	1
Dynamo Design (Electrical 12) p. 74.....	1	Engineering Inspections (Electrical 17) p. 75.....	1
Electrical Distribution (Electrical 9) p. 73.....	2	Hydraulic Engineering (Civil 43) p. 65.....	2
Electrical References (Electrical 13) p. 74.....	1	Thesis.	
Elementary Law (Bus. 5) p. 58.....	3		

REQUIREMENTS FOR THE DEGREE OF FOREST ENGINEER*

The Department of Forestry was established in the spring of 1905. The foundation was laid through the generosity of General Palmer and Dr. Bell, who presented the College a tract of 10,000 acres of land called Manitou Park. Of this, 3,200 acres of agricultural land have been sold, the proceeds being applied toward an endowment for the Department. The remainder of the tract, now known as the Manitou Forest, is timbered and is used for field instruction.

The aim of the Department is to give to students who intend to adopt Forestry as a profession a thorough training which will fit them for positions in the Government Forest Service, or as State Foresters, teachers of Forestry, or expert Foresters in private employ.

The location of the College in the National Forest region enables the Department of Forestry to fit its students particularly for administrative work in the Forest Service. The Department is excellently prepared to give the necessary instruction concerning the relations of the Forest Service with the grazing business, the mining business, and other enterprises characteristic of the West. Its location near the National Forest makes it possible to secure the frequent aid of Forest Service officers for lectures or instruction. Reference to the detailed descriptions of the courses in Timber Estimating, Forest Planting, and Forest Improvement Work, will indicate the possibilities afforded by the National Forests for gaining practical experience in timber cruising, timber sales, planting and nursery practice, grazing, etc.

Students who have completed two years of College work (60 half-year hours), in which the following courses, or their equivalents, have been included, will be admitted to instruction in the Department of Forestry as candidates for the degree of Forest Engineer: Biology 1, 3, and either 2 or 4 (p. 53); Chemistry 1 or 2, (p. 59); Civil 1 and 201 (p. 62); Civil 2 (p. 62); Civil 5 and 211 (p. 63);

*The requirements for Physical Education are the same as in the Department of Arts and Sciences, p. 95.

English 1 (p. 76); Geology 1 (p. 82); Graphics 6 (p. 87); Mathematics 1, 2, 3 (p. 90) (High school credit for Mathematics 2 is acceptable); modern language (2 years); Physics 1 and 2, or 3 and 4 (p. 98). Students who studied one or more than one modern language in preparatory school are advised to continue the study of that language in which they are most advanced. A reading knowledge of German is especially desirable. Further, the courses in Economics, Mineralogy, Meteorology, and Physics are commended as elective courses which will materially strengthen the student's Forestry Course.

The course in Forestry covers two years, and from the beginning of the college year until December 1 is conducted in the Manitou Forest, near Woodland Park, Colorado; from December 1 until the spring vacation in Colorado Springs; and from the spring vacation until June 1 in the Manitou Forest. In the Senior year the work of the spring term may be conducted elsewhere.

JUNIOR YEAR.

Fall Term, Manitou Forest. *Half-Year Hours.*

Forest Mensuration (see Forestry 1, page 79), first half of term....	5
Forest Surveying and Timber Estimating, (see Forestry 2, page 79); second half of term.....	5

Winter Term—Colorado Springs.

Dendrology, (see Forestry 3, page 79); lectures or recitations 5 hours a week and 6 hours of laboratory work.....	5
Wood Technology, (see Forestry 4, page 80); lectures 2 hours a week and laboratory 4 hours.....	2
Silviculture, (see Forestry 5, page 80); lectures 3 hours a week and silvical field studies.....	3
Forest Protection, (see Forestry 6, page 80); lectures 2 hours a week	2
Physical Education, p. 95.....	1

Spring Term—Manitou Forest and Monument Nursery.

Silvicultural Operations, (see Forestry 7, page 80).....	10
Forest Improvement Work, (see Forestry 8, page 81).....	2

SENIOR YEAR.

	<i>Half Year Hours.</i>
<i>Fall Term—Manitou Forest.</i>	
Forest Management, (see Forestry 9, page 81); lectures 5 or 6 hours a week and daily field or office work.....	10
<i>Winter Term—Colorado Springs.</i>	
Forest Utilization, (see Forestry 10, page 81); lectures 5 hours a week.....	4
Forest Geography, (see Forestry 11, page 81); lectures or recitations 5 hours a week.....	4
Forestry Policy, (see Forestry 12, page 82); lectures or recitations 3 hours a week.....	2
<i>Spring Term.</i>	
Lumbering Operations, (see Forestry 13, page 82).....	10

NOTE:—See also Forestry 3, page 79; Forestry 7, page 80; Forestry 10, page 81.

ADVANCED DEGREES

Permission to do graduate work in Colorado College does not necessarily imply admission to candidacy for the Master's degree. A graduate student who wishes to become a candidate for the degree must make application to the Committee on Advanced Degrees under whose supervision his work will be carried on. He is urged to make application at an early date, in order that the committee may have time to pass on his qualifications for admission. The programme of study for the degree and the subject of the dissertation must also be submitted to the committee for approval.

DEGREE OF MASTER OF ARTS

The Master's Degree is conferred subject to the following conditions:

(1) The applicant must have received the Bachelor's degree from some reputable college or university, and must have a reading knowledge of French or German,—preferably both.

(2) The applicant must pursue in residence a minimum course of nine hours of advanced work a week for one year. The work shall include both a major and a minor subject, and at least five hours a week shall be taken in the major subject. In addition, the

applicant must present a dissertation that embodies the result of a careful investigation, such dissertation to represent the equivalent of at least three hours of lectures a week for one year. The dissertation must be approved by the heads of the departments in which the major and minor subjects are taken and by a third professor, before the applicant is permitted to present himself for the final examination. The dissertation must be handed in not later than May 15, typewritten on pages 8½ by 11 inches, and a copy deposited with the College librarian.

(3) The final examination shall be oral and public, and it shall be in the presence of the professors in charge of the major and minor subjects and of a third professor. In the examination the applicant must give evidence not only that he has done satisfactorily the minimum requirements, as stated above, but also that he has a satisfactory knowledge of the general fields within which the major and minor subjects lie.

The fees are \$60 a year for tuition, \$5 for the diploma, and \$1 to bind the thesis.

Applications for the Master's Degree should be sent to the Chairman of the Faculty Committee on Advanced Degrees, who will furnish information about courses.

DEGREES OF CIVIL ENGINEER AND ELECTRICAL ENGINEER

The degrees of Civil Engineer (C.E.) and Electrical Engineer (E.E.) will be granted to graduates of Colorado College under the following conditions:

(1) The candidate must have the degree of Bachelor of Science in the course in which he seeks the professional degree.

(2) He must have been in practical work at least three years since receiving his Bachelor of Science degree.

(3) He must be registered and engaged in study under direction two years before he presents himself for his degree.

(4) The assigned work done must be equivalent, in the judgment of the department in which he seeks his professional degree, to fifteen half-year hours.

(5) A thesis upon an approved subject and the record of the candidate's professional experience must be submitted one month before the candidate appears for a degree.

(6) The candidate must appear before a Committee from the Engineering Faculty for an oral examination.

(7) The candidate will be judged by his thesis work and his general engineering knowledge and professional record.

The fees are \$25 each year and \$5 for a diploma.

DEGREE OF MASTER OF FORESTRY

Students who have been awarded a degree other than that of Forest Engineer, either at Colorado College, or at another institution of high standing, may receive the degree of Master of Forestry upon the satisfactory completion of courses equivalent to those required for the degree of Forest Engineer, in Trigonometry, Graphics, Civil Engineering, Botany, Meteorology, Geology, and all courses in Forestry. Students who enter Colorado College with the intention of obtaining the degrees of Bachelor of Arts and Master of Forestry should be able to complete their course in six years. Such candidates for the degree of Bachelor of Arts, should, while students in the College of Arts, major in Science. Graduates of other institutions who are candidates for the degree of Master of Forestry should, if they are well grounded in science, be able to obtain this degree in two years. If they have not studied Forestry, they cannot hope to obtain the degree in less than two years.

On account of the increasing demand that the technical forester have a broad, liberal education, the course leading to the degree of Master of Forestry is recommended.

THE HARVARD EXCHANGE.

Four years ago an arrangement was made whereby Harvard University, each year, sends a professor for a half-year to four Western colleges: Colorado College, Grinnell, Knox, Beloit, dividing the time equally among them; and each of them, in return, sends a member of its faculty to Harvard for a half-year, one-third of his

time to be given to instruction, and the remainder to graduate or research work.

The fifth Harvard professor to offer work according to this plan, at Colorado College, is

THOMAS NIXON CARVER, PH.D., LL.D.

Professor of Political Economy.

Professor Atherton Noyes, A. B., Professor of English, is exchange professor at Harvard for the full year, 1915-'16.

Courses of Instruction

ART.

ASSISTANT PROFESSOR SAHM.

1. **Ancient Art.*—A study of the architecture, sculpture, and painting of Egypt, Assyria, Greece, and Rome. Special stress will be laid on Greek art and its perfect expression of Greek ideals. Recitations and lectures. First half-year, 2 hours.
2. *Renaissance Art in Italy.*—Prerequisite, Art 1. A study of Italian Painting from the Early Christian period to the height of the Renaissance. The major part of the course will be devoted to the study of the great masters of the 15th and 16th Centuries in Florence, Rome and Venice. Recitations and lectures. Second half-year, 2 hours.
3. *The Art of Flanders and Holland.*—Prerequisite, Art 1. Flemish Painting from Van Eyck to Rubens and Van Dyck. The great Dutch painters of the 17th Century. Development of Portrait and Landscape Painting. Marine and Genre Painting. First half-year, 2 hours. Given in 1915-'16 and alternate years.
4. *The Art of Spain and France.*—Prerequisite, Art 1. Development of Spanish Painting under Italian and Flemish Influences. Velasquez and the Castilian School. Murillo and the Andalusian School. Survey of French Painting from the Early Renaissance through 17th Century Classic Art. Second half-year, 2 hours. Given in 1915-'16 and alternate years.
5. *German and English Art.*—Prerequisite, Art 1. The great German Painters of the 15th and 16th Century. The Portrait Artists of England in the 18th Century. Later English Art. The Pre-Raphaelite Brotherhood. First half-year, 2 hours. Given in 1916-'17 and alternate years.

*Open to Freshmen by special permission.

6. *Movements in 19th Century Art*.—Prerequisites, Art 1 and one other course. Summary and criticism of Modern Painting. Romanticism versus Classicism in French Art. The Barbizon School of Painters. Impressionism. Contemporary Painting in Europe. Brief Review of American Art. Second half-year, 2 hours. Given in 1916-'17 and alternate years.
7. *Art Seminar*.—Prerequisites, Art 1 and one other of the courses offered. Discussion of æsthetic problems. Detailed analysis of important movements in art. Study of European art centers. Conferences, reports, bibliography. Second half-year, 1 hour.
8. *History of Architecture*.—A study of the development of historical styles from antiquity to modern times with emphasis upon the structural and æsthetic principles upon which art form is based. First half-year, 2 hours.
9. *Mediaeval Art*.—Prerequisites, Art 1 and one other course. An advanced course in the study of the Byzantine, Romanesque and Gothic periods in Italy, France, Germany and England, with special emphasis on Gothic architecture and sculpture in the 13th and 14th Centuries. Lectures and required readings. Second half-year, 1 hour.
10. *Greek and Roman Archaeology*.—Prerequisite, Art 1. An advanced course in Egyptology, Greek Vases, Greek and Roman Numismatics. 1 hour throughout the year.

ASTRONOMY.

PROFESSOR ALBRIGHT.

1. *General Astronomy*.—Introductory and descriptive. First half-year, 3 hours. Offered in 1915-'16 and alternate years.
2. *Elementary Meteorology*.—First half-year, 3 hours. Offered in 1916-'17 and alternate years.
3. *Constellations*.—Study of the stars; chart making. Lectures and night work. Once every week throughout the year, credit one hour each semester. Given in 1916-'17.

NOTE:—For a course in *Field Astronomy*, see Civil 2, p. 62.

BIBLICAL LITERATURE AND APPLIED RELIGION.

PROFESSOR FALES.

18. *Biblical Introduction*.—A course covering such general information about the Bible as should be the possession of every student. A survey of the origin and contents of the various Bible books, especially with regard to their place in Hebrew or Christian history; including an analysis of the religious significance of the Prophetic and Priestly material, the Wisdom Literature, and the Apostolic histories and epistles; and summarizing the story of the transmission of the Bible through the various translations, to the present time.

Not open to Freshmen, except by special permission of the instructor. First half-year, 3 hours.

22. *Old Testament History and Literature*.—Prerequisite, Bible 18 or Bible 4. Hebrew history to the time of Christ, and its relation to that of the great ancient empires. Special reference to the stages of the development of Hebrew religion, as expressed in the various types of Old Testament and Apocryphal literature. Second half-year, 2 hours.

20. *The Life of Jesus*.—A course designed to give a unified impression of the events of Jesus' life, and their significance as a foundation for Christian history. Primarily for Sophomores and Freshmen. First half-year, 1 hour.

19. *The Apostolic Age*.—Prerequisite, except for Seniors, either Bible 18, 4, 22 or 20. The beginnings of Christianity. Preliminary outlines of the condition of the Roman world, and of the life of Jesus, followed by a study of the rapid spread of the teachings of Jesus as applied by his first followers. Second half-year, 2 hours.

23. *The Principles of Christianity*.—Prerequisite, any one of the following: Bible 18, 4, 22, 20, 19, 15. The main Christian beliefs, and the various resulting Christian institutions, including some comparison of Christianity with the great Ethnic religions. First half-year, 2 hours.

11. *The Social Teachings of Jesus*.—With special reference to their bearing on modern social problems. First half-year, 1 hour.
21. *Community Problems and Christian Teachings*.—A survey of existing agencies of Reform, Philanthropy, and Social Service, in various types of American communities, and the problems they are attempting to solve, including a study of the purpose, methods, and comparative effectiveness of the Christian Church. Second half-year, 1 hour.
24. *Seminar in Applied Religion*.—Discussions of the aims and methods of religious and other social service institutions. Required field-work, chosen by the student, investigations and reports. Adapted to those already engaged in some form of community service. Fortnightly meetings during the year. Credit one hour, each half-year. Either Bible 11 or Bible 21 is a prerequisite, unless one of them is taken in conjunction with this course. It may be taken by Seniors, upon special permission, as a half-year course, the first half-year only.

PROFESSOR PARSONS.

25. *Wisdom Literature*.—A study of Proverbs and Job and the literary type they represent. First half-year, 1 hour. Given in (1917-'18.)
15. *Present Day Religious Problems*.—The modern attitude toward such questions as God, the Bible, Sin and Punishment, the Future Life, etc. First half-year, 1 hour. Given in (1917-'18.)
4. *The Prophets*.—The place of the prophets in the development of Hebrew history. Their manhood and their message. First half-year, 2 hours. Given in 1916-17.

NOTE:—For other allied courses see: Greek 8, New Testament Greek; Economics 104, Problems in Sociology; Philosophy 12, Psychology of Religion; also Philosophy 3, 4, 5, and Economics 22.

BIOLOGY.

PROFESSOR SCHNEIDER, MR. BAKER, MISS SMITH.

1. *General Biology*.—A general outline of the fundamental principles of Biology. Some topics considered are the origin of living matter, organization, growth and reproduction, differentiations, evolution.
 - (a) First half-year: *Plant Studies*.—In the laboratory a comparative study is made of the cryptogams, beginning with the simplest forms. This is followed by a study of the life history of the pine and a typical flowering plant.
 - (b) Second half-year: *Animal Studies*.—The laboratory work involves a study of representatives of the principal groups of animals.

Recitations or lectures 3 hours, laboratory work 4 hours, credit 3 hours.

PROFESSOR SCHNEIDER, MISS SMITH.

2. *Plant Physiology*.—Prerequisites, Biology 1, and one year of Chemistry. A laboratory, recitation, and lecture course on the functions of the organs of seed plants. Emphasis is placed upon composition and nutrition of plants, and the vegetable enzymes. First half-year, recitations or lectures 2 hours, laboratory work 4 hours, credit 3 hours. Given in 1915-'16 and alternate years.
3. *Botany of the Seed Plants*.—Prerequisite, Biology 1. Adaptations, migration, distribution, and successions are considered at length. Opportunity is also given the student to become proficient in the determination of plant species among gymnosperms and angiosperms. Field excursions for the purpose of studying the local plant geography. Second half-year, recitations or lectures 3 hours, field or laboratory work 4 hours, credit 3 hours.

MISS SMITH.

4. *Plant Histology*.—Prerequisite, Biology 1. This course, in addition to a study of plant structure, affords experience in

the technic of microscopic preparations. The paraffin method, the celloidin method, the freezing method, the glycerin method, and free-hand sectioning are applied. First half-year, credit 2 or 3 hours (3 hours in the laboratory counting as 1 hour).

20. *Systematic Botany*.—Prerequisites, Biology 1 and 3. Some time will be spent on the pteridophytes and gymnosperms but most of the time will be given to the angiosperms. The evolution of the angiosperms will be taken up and all of the important families will be studied in detail. Second half-year, recitation or lecture 1 hour, field or laboratory work 3 hours, credit 2 hours.

PROFESSOR SCHNEIDER.

5. *Bacteriology*.—Prerequisite, Biology 1. Apparatus; culture media and methods of preparation; sterilization methods, microscopic characteristics of cultures of bacteria in general and of special forms, and methods of diagnosis; methods of obtaining pure cultures; methods of staining; bacteriological investigations of water, air, and soil. Students electing this course are expected to take Biology 6. Second half-year, lectures or recitations 2 hours, laboratory work 3 or 6 hours, credit 3 or 4 hours. Given in 1916-'17 and alternate years. Open to Juniors and Seniors.
6. *Sanitary Science and Public Health*.—A lecture course. Some of the topics discussed are: Death and its causes; classification of diseases; ancient and modern theories of disease; germ theory of infectious disease; direct causes and predisposing causes of disease; means of avoiding and resisting disease; vehicles of disease, such as dust, sewage, water, etc.; brief sketch of the important transmissible and epidemic diseases, prophylaxis, etc. Each half-year, 1 hour.
7. *Physiology and Personal Hygiene*.—Prerequisite, Biology 1. Lectures, recitations, and demonstrations dealing with the structure and activities of the human body. Emphasis is placed upon hygienic problems. Each half year, 3 hours.
8. *Experimental Physiology*.—Prerequisites, Biology 1 and 7, and one year of Chemistry. Students are advised to elect this

course with Biology 7. The experimental work covers the following subjects: The physiology of ciliary motion; the general physiology of muscle and nerve tissue; phenomena of circulation, with countings of the blood-corpuscles and estimation of hæmoglobin; respiratory exchanges, movements, etc.; digestion and absorption; physiology of the spinal cord and brain; of the cutaneous sensations, taste, smell, hearing, and vision. Each half-year, 3 hours in the laboratory, credit 1 hour.

9. *Physiology*.—Prerequisites, Biology 1 and Chemistry 2. This course is adapted to the needs of the student planning to study medicine. Each half-year, recitations or lectures 3 hours, laboratory work 5 hours, credit 4 hours.
18. *Evolution*.—Prerequisite, Biology 1. The history of the theory; the evidences for descent; the theories of species-forming, with a study of statistical and experimental evidence. First half-year, 3 hours. Given in 1916-'17 and alternate years. Open to Juniors and Seniors.

MR. BAKER.

10. *Invertebrate Morphology*.—Prerequisite, Biology 1. A study is made of the advance in specialization from the Protozoa to the Vertebrates. Types of the more important groups are studied in the laboratory. This course is especially recommended for those intending to teach Biology. First half-year, lectures or recitations 2 hours, laboratory work 4 hours, credit 3 hours. Given in 1915-'16 and alternate years.
15. *Comparative Anatomy of Vertebrates*.—Prerequisite, Biology 1. A comparative study of vertebrate structure. Dissections are made of the Amphioxus, Necturus, the shark's head, and a mammal. Second half-year, lectures 2 hours, laboratory work 4 hours, credit 3 hours.
11. *Histology*.—Prerequisite, Biology 1. A comparative detailed study of the tissues of the higher animals. Preparations of the principal tissues and organs are made and the common methods of preparation and mounting studied. Special microscopic drill is given in distinguishing the different

tissues and organs. First half-year, recitations 2 hours, laboratory work 4 hours, credit 3 hours. Given in 1915-'16 and alternate years.

12. *Embryology and Cytology*.—Prerequisite, Biology 1. A study of maturation, fertilization and cleavage of the ovum, early stages of the embryology of the chick and pig. Special attention is given to the differentiation and development of tissues and organs. Students make most of their own preparations. Second half-year, recitations or lectures 2 hours, laboratory work 4 hours, credit 3 hours. Given in 1915-'16 and alternate years.
14. *History of Biology*.—Prerequisite, Biology 1. A study of the lives and work of the more important men who have shaped biological thought and of the development of the latter. Recitations, lectures, and assigned readings. Second half-year, 2 hours. Given in 1916-'17 and alternate years.
13. *Entomology*.—A study of the kinds, structure and life histories of insects, with some reference to the detrimental and useful forms. A collection of local forms will be made and identified and a study of their habits will be carried on in the field. First half-year, lectures 2 hours, field and laboratory work 4 hours, credit 3 hours. Given in 1916-'17 and alternate years.
16. *Animal Distribution*.—Prerequisite, Biology 1. Lectures, assigned readings, and laboratory and field study. An attempt will be made, during the early portion of the half-year, to study the different local forms, both in the field and in the laboratory, and to outline the fundamental principles of Animal Ecology. After cold weather begins, the time will be spent on Zoogeography, the distribution of animals throughout the world. First half-year, lectures two hours, laboratory or field work 4 hours, credit 3 hours. Given in 1916-'17 and alternate years.

LABORATORY FEES.

Course 1, 2, 4, 10, 11, 12, 13, or 15.....	\$3.00
Course 3 or 16.....	1.50
Course 5 or 9.....	6.00
Course 8	4.00

BUSINESS ADMINISTRATION AND BANKING.†

PROFESSOR PERSONS, ASSISTANT PROFESSOR BLUM, MR. ELLINGWOOD
AND MR. KLAHR.

12. *Mathematical Theory of Investments*.—A course covering progressions, limits, and series, logarithms, graphic representation, interest, annuities, amortization, valuation of bonds, sinking funds and depreciation, theory of probability, life annuities and the elements of life insurance. Prerequisite, Mathematics 1. Second half-year, 3 hours.

1. *The Theory and Practice of Accounting*.

(a) Double-entry drills, modern forms of accounting and practice in the use of essential books. Business forms, methods, and documents such as drafts, notes, and bills of lading.

(b) Partnership and corporation accounts, analysis of classified statements, manufacturing and trading accounts. Accounting procedure. Not open to Freshmen. Each half-year, 3 hours.

14. *Advanced Accounting*.—Amortization and depreciation accounts, annuities, cost accounting, auditing and advanced accounting procedure. Prerequisite, Business 1. Second half-year, 2 hours.

3.**Commerce and Industries*.—Prerequisite, Economics 2. After a survey of the development and status of foreign industries, natural resources and the expansion of commerce, a special study is made of the principal articles which enter into American commerce. Resources, industries, and trade currents are treated. Second half-year, 3 hours.

4.**Corporation Finance and Industrial Organization*.—Historical development and analysis of the different forms of industrial organization, including the partnership, joint-stock company, and the corporation, and the later developments, such

†NOTE:—Of the courses listed above, only Business 4 and 7 will count toward a major in Economics.

*Prerequisite, Economics 1.

as the pool, trust, combination, and holding company. Elements of corporation finance, with special reference to organization and management. The evils of corporate organization, such as fraudulent promotion, over-capitalization, and manipulation. Public policy toward corporations, with special reference to taxation. A brief consideration of public-service corporations with special reference to municipal utilities. First half-year, 3 hours.

5. *Commercial Law* (First year).—The first half-year will be given to the study of the general law of contracts. In the second half-year, a more detailed study will be made of Negotiable Instruments, Sales, and Bailments. Open only to Juniors and Seniors. Each half-year, 3 hours.
13. *Commercial Law* (Second year).—First half-year: Carriers, Insurance, Guaranty and Suretyship, Agency. Second half-year: Partnership, Corporations, and an introduction to the law of property with emphasis upon the law of decedents' estates. Prerequisite, Business 5. Each half-year, 2 hours.
6. **Business Organization and Management*.—An intensive study of the principles and mechanism of organization and management, with special emphasis on the following phases: the general institutions and forms of management; the determination and direction of operations; the plant, its site, construction and adaptation to the business; purchasing; the custody and treatment of stores and stock; the selection, care, and maintenance of tools and machinery; the selection, treatment, and payment of labor; selling and the organization and management of the sales force; credit and collections; advertising. Various types of business—retail, wholesale, and manufacturing—are considered, and a careful study is made of the principles of Scientific Management. Prerequisite, Business 1. Second half-year, 3 hours.
- 7.**Transportation*.—Steam Railways. (a) The railway problem of the United States, including theories of rates, combination and pooling, consolidation, community of ownership, and government ownership or control, involving a careful consideration of the work of the Interstate Commerce

Commission and of State commissions. (b) A comparative study of the railway systems of other countries, especially England, Germany, France, Canada, and the Australian Commonwealth, with a consideration of the economic significance of the world's great railway systems.

Transportation and communication other than by steam railways. (a) Lake, river, and canal transportation in the United States and other countries. (b) Ocean transportation with special reference to its relation to the transportation systems of various countries. (c) Interurban railways and their growing competitive power, telegraphs, telephones, and cables. First half-year, 3 hours. Not given in 1916-'17.

9.**Banking Practice*.—Outline of the work of commercial, savings and financial banks and trust companies. The nature of investments of the different institutions. The federal reserve system and its functions. The nature of the demand for credit and currency. The documents used in foreign exchange. Commercial and travelers' credits. Currency movements and their causes. Parity sheets and the method of computation of parities. Prerequisite, Economics 9. First half-year, 3 hours.

10.**Investments and Speculation*.—Investment Banking. Speculation and the organized exchanges. A study of the phenomena connected with business prosperity and depression, industrial crises and financial panics. History and theory of business cycles. Effects of business cycles on investments, speculation and business enterprise. Prerequisite, Business 9. Second half-year, 3 hours.

15.**Relation of Legislation to Economics*. First half-year, 2 hours.

CHEMISTRY.

PROFESSOR STRIEBY.

2. *Advanced Chemistry*.—The lectures treat chiefly of Inorganic Chemistry, but half of the second semester is given to Organic Chemistry. Emphasis is placed on the principles of chemical science, the chemical laws and their methods of

*Prerequisite, Economics 1.

- deduction, structural formulæ, chemical reactions and stoichiometry. The applications of chemistry to the arts, to sanitary science and to common uses, are made prominent. Abstracts from books or descriptions of observed processes are required in each semester. The laboratory work affords a practical introduction to the qualitative analysis of common acids and bases, and also gives limited practice with balances and burettes in exact quantitative determinations by gravimetric methods and with standard solutions. (Gas determinations and partial analysis of water is also included.) Each half-year, recitations or lectures 3 hours, laboratory work 4 hours, credit 3 hours.
5. *Organic Chemistry*.—Prerequisite, Chemistry 2. Remsen's *Organic Chemistry*. Recitations, lectures and discussions of special subjects and processes. Each half-year, recitations 3 hours, laboratory work 4 hours, credit 3 hours.
6. *Theoretical Chemistry*.—Prerequisite, Chemistry 2. Text-book work with lectures and oral and written discussions. Each half-year, 3 hours.
7. *Medical Chemistry*.—Prerequisite, Chemistry 2. Lectures, text-book, assigned reading, and laboratory work. The study is mainly of substances, inorganic and organic, that are of importance, in medical science and hygiene. Special attention is devoted to the examination of carbohydrates, proteins, fats, blood, milk, urine, and digestive agents. The needful gravimetric determinations, considerable volumetric work with burettes and standard solutions, and microscopic and spectroscopic tests, supplement the usual qualitative examinations. Hawk's *Physiological Chemistry*. Each half-year, recitations 4 hours, laboratory work 8 hours, credit 4 hours.

MR. CLARK.

1. *Elementary Chemistry*.—Text-book work (chiefly Inorganic Chemistry) supplemented by lectures and discussions upon the fundamental laws, the application of chemistry to sanitary science, medicine, and some of the arts, and also by occasional papers from descriptions in technical books, and

by reports of visits to metallurgical and manufacturing establishments. Remsen's *College Chemistry*. Each half-year, recitations 3 hours, laboratory work 4 hours, credit 3 hours.

3.**Qualitative Analysis*.—Prerequisite, Chemistry 2 or equivalent. Required of all majors in Chemistry and all Electrical Engineers. Experimental drill in obtaining characteristic reactions of the more common elements, study of empirical formulæ and symbolic expression of reactions, solution of substances, separation of groups and elements, and analysis of simple salts and of complex mixtures and alloys. The laboratory work deals mainly with inorganic substances. The lectures, given two hours per week during the first quarter, take up the laboratory work in detail. First half-year, laboratory work 8 hours, credit 4 hours.

4. *Quantitative Analysis*.—Comprises one full year's work. 4a begins in January, 4b in September.

(a) *Prerequisite, Chemistry 3. Required of all majors in Chemistry and Electrical Engineers. The laboratory work begins with the determination of single elements by approved Gravimetric and Volumetric methods. This is followed by the Proximate analysis of coal with its calorific power, limestone, boiler water and flue gas analysis. The lectures treat of the methods of analysis, properties of precipitates, stoichiometry, sampling, reporting, and the theory of solutions. One half-year, recitations 1 or 2 hours, laboratory work 8 hours, credit 4 hours.

(b) Prerequisite, completion of 4a. The laboratory work and lectures are continuations of 4a, taking up the analysis of iron, copper, manganese, zinc and lead ores; a complete feldspar analysis; and determinations of sulphur and silicon in steel and pig iron. One half-year, recitations 1 hour, laboratory work 12 hours, credit 5 hours.

*Courses 3 and 4a are shortened for Electrical Engineers only, so that each requires 5 hours of laboratory work per half-year. Credit, 3 hours.

8. *Agricultural Chemistry*.—Prerequisite, Chemistry 2. A study of soils, fertilizers, and foods; the analysis of soils, manures, and dairy products. Each half-year, recitations 1 hour, laboratory work 5 hours, credit 3 hours.
9. *Assaying*.—Prerequisite, Chemistry 4a and 4b. Sampling and assaying of gold, silver, copper, and lead ores, mattes and bullions. Lectures and laboratory practice. Second half-year, recitations 1 hour, laboratory work 3 4-hour periods, credit 4 hours.

The fee for every course must be paid in advance. It covers the cost of gas, chemicals, and non-returnable supplies, except platinum. Glassware and necessary apparatus (except platinum vessels) are loaned to the student and must be returned in good condition. The fees are as follows:

Course 1.....	\$ 7.00
Course 2.....	8.00
Course 3 or 4, each year's work.....	15.00
Course 5 or 7.....	15.00
Course 8.....	10.00
Course 9.....	20.00

No portion of the fee can be returned to any student who drops his course later than the first of December.

CIVIL AND IRRIGATION ENGINEERING.

MR. OKEY, PROFESSOR ALBRIGHT.

1. *Theory and Practice of Surveying*.—Mathematics 3 must precede or accompany this course. Construction, use, and adjustment of instruments; pacing, use of chain, compass, level, and transit; contouring and leveling by hand; cross-sections; azimuth traverse; balancing survey; computation of areas and volumes; mapping. Second half-year, 2 hours. *Required of Civil Engineers and Foresters in the Freshman year.*
2. *Field Astronomy*.—Prerequisite, Civil Engineering 1, Civil Engineering 201. The practical application of astronomy to the problems of surveying. Determination of latitude, longitude, azimuth, and time by means of the sextant, engineer's

transit, and chronometer. Second half, Sophomore year. Two recitations, three hours' field work, credit 3 hours. *Required of Civil Engineers.* Fee, \$2.00.

5. *Advanced Surveying.*—Continuation of Course 1. Topographic surveying; stadia measurements, plane table; hydrographic surveying; city surveying; geodetic surveying. Recitations, lectures, and assigned reading. The field work problems are assigned on the basis of the student's previous field experience. The following surveys and maps are required: Transit and stadia topography; plane table topography; repetition traverse; reservoir site; street grades; city subdivision; hydrographic survey; triangulation survey. Students seeking advanced credit in surveying must present notebook covering the work for which credit is sought. First half-year, 2 hours. *Required of Civil Engineers in the Junior year, and of Foresters in the Sophomore year.*
7. *Elementary Plane Surveying.*—A course in the use and adjustment of instruments for Electrical Engineers. The course is designed to give a general idea of surveying methods and the use of simple surveying instruments. It is necessarily elementary in character and restricted in scope. Second half, Junior year, three hours' field work, credit 1 hour. *Open only to Junior Electrical Engineers.* Fee, \$2.00.

MR. OKEY AND ASSISTANTS.

20. *Railway Curves.*—Theory of simple, compound, and transition curves, vertical curves, frogs, switches, and crossings. Recitations, field work, lectures, and problems. First half, Junior year, 2 hours. *Required of Civil Engineers.*
21. *Railway Engineering.*—Reconnaissance; preliminary survey; maps and profiles; location; cross-sections; earthwork computations; mass diagram; yard layouts for freight and passenger use; construction of wooden trestles and masonry culverts; tunnels; track; ordinary and extraordinary methods of drainage; water supply, its quality, storage, and delivery; preservation of timber; block signals; general maintenance. The field work of this course involves the location and cross-sectioning of a short railroad line, together

with the preparation of maps, profiles and estimates necessary to put it under construction. Second half, Junior year, 3 hours. *Required of Civil Engineers.*

22. *Railway Economics*.—Sources and value of train resistance; the relation of curvature and grades to velocity and maximum train load; effect of momentum; balance of grades for unequal traffic; analysis of operating expenses; cost of extra distance, curvature, rise and fall, and of additional trains; effect of roadbed on cost of running trains; pusher grades; value of additional traffic; improvement of old lines; standard plans; estimates of cost. Lectures, recitations, problems. First half, Senior year, credit 2 hours. *Required of Civil Engineers.*

MR. OKEY, ASSISTANT PROFESSOR MOORE.

31. *Masonry*.—Cement, concrete, and masonry; stone and brick, requisites, tests, durability, classifications, and specifications; stone-cutting, quarrying, dressing and bedding; manufacture of brick; composition and manufacture of limes and cements; their requisites, tests, specifications, preservation and use; natural and Portland cements, sand, gravel, broken stone; proportions and quantities of concretes; economic proportions; concrete mixing and depositing; artificial stones; preservations; methods of quarrying; drilling, channeling, and wedging, use of explosives; classification and specifications of stone and brick masonry; measurements and cost; strength and durability; safe loads on masonry. Recitations, lectures, and notes. First half, Junior year, 2 hours. *Required of Civil and Irrigation Engineers.*
32. *Reinforced Concrete*.—Properties of concrete and steel; theoretical proportioning of concrete; concrete and steel in combination; temperature stresses; theory and design of rectangular beams, slabs, cross beams, girders, columns, arches and retaining walls; theory of bending and direct stresses; use of slab, beam, and column tables and diagrams; complete design and detailed drawings of a reinforced concrete girder bridge, and a six-story reinforced concrete building. Recitations, lectures, assigned readings, problems and design work

in the drafting room. First half, Senior year. 2 hours. *Required of Civil and Irrigation Engineers.*

33. *Foundations.*—Foundations of steel grillage and of concrete-steel for buildings; safe loads on masonry and foundation beds; examinations of foundation sites; pile driving and pile foundations; sheet-piling and coffer-dam methods; pneumatic foundations and caisson work; open dredging; bridge piers of masonry and steel; deep foundations; sub-aqueous tunneling. Recitations and design work. First half, Senior year, 2 hours. *Required of Civil and Irrigation Engineers.*

MR. OKEY AND ASSISTANTS.

41. *Hydraulics.*—Flow of water through orifices; time required for discharge of canal locks and similar volumes; weir discharge and gauging by weirs; gauging of water for irrigating systems; flow through pipes; design of pipe systems; the Venturi meter; flow and discharge of open canals and rivers; principles of impulse and of reaction water wheels. First half-year, 2 hours. Recitations and problem work. *Required of all Junior Engineers.*
42. *Hydraulic Laboratory.*—Application in the laboratory of the principles and theory studied in Course 41. First half, Junior year, laboratory 3 hours, credit 1 hour. Open to those who have registered in Course 41. *Required of Junior Civil Engineers.* Fee, \$3.00.
43. *Hydraulic Engineering.*—Continuation of Course 41. Collection and storage of water; analysis of hydrographic data with particular reference to Colorado and other Western states; hydraulic motors; design of hydro-electric power plants. Recitations, lectures, and assigned reading. Credit 2 hours. *Required of Senior Irrigation and Electrical Engineers.*

MR. OKEY.

51. *Irrigation Engineering.*—Irrigation of land; amounts and periods of application; grades, cross-section, and capacity of canals; surveys for irrigation works; source of water supply; hydrographic data; Colorado streams; return of seepage waters; irrigation by pumping. Lectures, recitations, design

work, and assigned reading. Second half, Senior year, 3 hours. *Required of Senior Civil Engineers and of Junior Irrigation Engineers.*

61. *Water Supply.*—Rainfall and storage; flow of streams; influence of soils, elevation and geologic characteristics of watershed; methods of supply; underground flow; reservoir construction; distributing systems; house-supply and wastage; water purification; sand filters, design and construction of water supply system for typical town; maintenance, and office records. Recitations, lectures, collateral reading, and design work. First half, Senior year, 3 hours. *Required of Civil and Irrigation Engineers.*
62. *Sanitary Engineering.*—Treatment and disposal of sewage and refuse by sedimentation, precipitation, and use of septic tanks; treatment of effluence by continuous and intermittent sand filtration; fertilization; disposal of sludge; sewage and surface drainage of cities and towns; separate and combined systems of sewers; capacity of mains and branches; catch-basins, manholes; flush-tanks; outfalls; grades and sections; flow and discharge of sewers; construction. Lectures, recitations, and assigned readings. Second half, Senior year, 2 hours. *Required of Civil and Irrigation Engineers.*
71. *Roads, Pavements and Parks.*—Surveys and locations; drainage and grades; foundations; selection and treatment of materials; maintenance of roads and pavements; design, construction, and maintenance of parks and parkways. Lectures, recitations, and assigned readings. Second half, Senior year, 2 hours. *Required of Civil Engineers.*

MR. OKEY AND ASSISTANTS.

81. *Resistance of Materials.*—Laws of elasticity in homogeneous materials; coefficients of elasticity; relations between stresses and strains; common theory of torsion and flexure; elastic limits, working stresses and ultimate resistance of wrought iron, cast iron, steel, alloys, timber, simple and continuous beams; design and construction of iron, steel, and timber columns and beams; shafts; cables; specifications. First

half-year, 3 hours; second half-year, 2 hours. *Required of all Junior Engineers.*

82. *Testing Laboratory.*—Tests of the materials of construction, including steel, wrought iron, cast iron, brick, stone, cement, concrete, and timber. Each student is required to make individual tests and reports. Second half-year, one 3-hour laboratory period per week, credit 1 hour. *Required of all Junior Engineers.* Fee, \$4.00.
83. *Stresses.*—The truss element; simple non-continuous trusses with parallel chords; fixed and moving loads; through and deck spans; position of any system of concentrated moving loads for greatest chord and web stresses; combination of analytical and graphic methods; application to bridge and roof trusses; arched ribs. Two recitations, three hours in drafting room, with problems; lectures. Second half, Junior year, credit 3 hours. *Required of Civil Engineers.*
84. *Bridge Design.*—Railway and highway bridges; pin and riveted connections; the design of details for bridges, roofs and buildings; floors for buildings and railway and highway bridges; wind loads and stresses; complete designs and detail drawings of a roof truss, a deck plate girder, a riveted pony highway truss, and a through pin connected railway truss. Lectures on modern shop and drafting room practice. First half-year, two recitations and three hours in the drafting room; second half-year, two recitations and six hours in the drafting room. Throughout the Senior year. Credit, first half-year, 3 hours; second half-year, 4 hours. *Required of Civil Engineers.*
201. **Field Practice in Plane Surveying.*—Prerequisite, Civil 1, Graphics 1. Four weeks in Manitou Park, between the Freshman and the Sophomore years. Credit 4 hours. *Required of Civil and Irrigation Engineers, and Foresters.* Fee, \$10.00.
211. **Field Practice in Advanced Surveying.*—Prerequisite, Civil 5. Foresters' Course. Credit 4 hours. Four weeks in Manitou Park. *Required of Foresters.* Fee, \$10.00.

*Given at Manitou Park during June and July.

221. **Railway Field Work.*—Prerequisite, Civil 21. Two weeks in Manitou Park, between the Junior and the Senior years. Credit 2 hours. *Required of Civil Engineers.*
241. **Field Practice in Hydrographic and Mineral Land Surveying.*—Two weeks in Manitou Park, between the Junior and the Senior years. Credit 2 hours. *Required of Civil Engineers.* Fee for Courses 221 and 241 together is \$10.00.
251. **Field Practice in Irrigation Surveying.*—Prerequisite, Civil 5. Four weeks in Manitou Park, between Junior and Senior years. Credit 4 hours. *Required of Irrigation Engineers.* Fee, \$10.00.

*Given at Manitou Park during June and July.

ECONOMICS AND SOCIOLOGY.†

PROFESSOR PERSONS AND ASSISTANT PROFESSOR BLUM.

1. *Principles of Economics.*—A general survey based upon the study and discussion of a text-book giving the currently accepted scientific analysis of industrial society, supplemented by lectures and assigned readings on current economic problems. The purpose of the course is to teach fundamental principles, to open the field of economics in the way most helpful to further more detailed study of special problems, and to give to those who intend to adopt business, law, or journalism, the general rules and principles contributed to business by the science of economics. Not open to Freshmen. Each half-year, 3 hours.
21. *Commercial Development.*—The history of intersectional and international commerce. The organization of industry in Europe and the United States. Emphasis on the period 1750-1850. Economics 1 must precede or accompany this course. First half-year, 3 hours.

*Prerequisite, Economics 1.

†NOTE:—All of the courses listed above in Economics and Sociology, except the first half-year of Economics 1, count toward a major in Economics. Other courses, to count as part of the thirty hours required to make a major, must be approved by the professor under whom the major is taken.

2. **Advanced Economic Theory.*—A study of the history of economic thought since the time of Adam Smith, with special reference to the economic conditions which influenced those theories. The latter part of the course will be devoted to an examination of modern theories of distribution. Second half-year, 3 hours. Given in 1915-'16 and alternate years.
9. **Money and Banking.*—The history and theory of money, credit, and banking. The evolution of metallic currency; the position of the bimetallists and the quantity theorists; credit, credit instruments, paper money, convertible and inconvertible notes, modern currency problems, and foreign banking systems are studied with special reference to American currency and banking. Discussions of current topics and statistics relating to money, banking, domestic and foreign commerce and exchange, price movements, etc. Students will be expected to subscribe to a standard financial journal. Second half-year, 3 hours.
10. **Public Finance.*—A survey of the whole field of public finance, including (a) public revenues, their nature, classification and characteristics, with special emphasis on taxation; (b) public expenditures, their classification and relation to public welfare and to governmental functions; (c) the budget and its preparation in the great countries of the world; (d) public credit, its nature, employment, industrial effects, and administration. Second half-year, 3 hours. Given in 1916-'17 and alternate years.
18. **Statistics.*—The history, theory and methods of statistics. The making of schedules; the collection and tabulation of data; averages; graphic representation; frequency tables and curves; correlation; interpolation, etc. Second half-year, 3 hours.
19. **Insurance.*—The theory of insurance; the development of insurance companies; the various systems of insurance; company management. The mathematics of compound interest, including annuities certain. The theory of probabilities as applied to the construction of mortality tables; the computa-

tion of reserve, surplus, premiums, endowments, dividends, etc., for life insurance. First half-year, 3 hours. Given in 1915-'16 and alternate years.

22. **Labor Problems and Socialism*.—Present day labor problems connected with trade and industrial unions, wages, unemployment, efficiency, political action and theories, conciliation, and arbitration. The history of the labor movement during the period 1750 to date. Second half-year, 3 hours. Given in 1915-'16 and alternate years.

101.**Principles of Sociology*.—In this course an attempt is made to formulate the fundamental laws of association, with special reference to their relation to social progress. Such topics as the influence of the physical environment, natural selection, warfare, division of labor, sex and sexual selection, heredity, imitation, social oppositions, art, science and religion, will be discussed with reference to their effects on social progress. First half-year, 3 hours.

104.**Problems in Sociology*.—A study of particular social problems, including suicide, the liquor problem, divorce, immigration, poverty, crime, etc. Second half-year, 3 hours. Given in 1916-'17 and alternate years.

*Prerequisite. Economics 1.

EDUCATION.

[Education courses are open to Juniors and Seniors only.]

PROFESSOR BREITWIESER.

3. *Mental Development*.—Kirkpatrick's *Fundamentals of Child Study* and his *Genetic Psychology* are used as a point of departure. Class reports and discussions. First half-year, 2 hours.

4. *Educational Psychology*.—A study of the psychology of pupils in the schools. adolescence, sex, deficient children, environment, and heredity. Second half-year, 2 hours.

6. *Practice Teaching*.—This course meets the requirements of the State Board of Examiners concerning Practice Teaching. Provision is made for practice teaching in both primary and secondary grades. Either half-year, 4 hours.

PROFESSOR BREITWIESER AND MR. GERLACH.

5. *Research Work in Problems of Educational Psychology*.—For graduate students and advanced undergraduates. Hours to be arranged. This course gives an excellent opportunity for candidates for the A. M. degree to combine that work with practical work in the Colorado Springs schools.

MR. GERLACH.

1. *History of Education*.—A study of the more important educational theories and movements in their larger relationships. The historical problems are treated as far as possible from the standpoint of social psychology, and their relation to present day questions is emphasized. Graves' *History of Education* is used as a basis. First half-year, 2 hours.
2. *Modern Educational Development*.—A continuation of the History of Education in which emphasis is put upon the movements affecting present systems. Readings from current educational literature. Second half-year, 2 hours.
7. *School Problems*.—This course is designed to give practical instruction to those who expect to teach. Reports, discussions, and lectures will be given on school organization, management, teaching, etc. Second half-year, 3 hours.
9. *Principles of Education*.—Fundamentals which underlie the educative process are discussed. The curriculum, aims, values, agencies, and internal development are taken up in an attempt to place education upon a scientific basis. First half-year, 2 hours.

NOTE 1.—The opportunities for practice teaching are made possible by the generous coöperation of the officers and teachers of the public school systems of Colorado Springs and Colorado City, and of the San Luis School.

NOTE 2.—For courses in other departments intended especially for teachers, see Greek 7, Latin 8, English 25, German 12, French 6 and 7, Spanish 5 and 6, Mathematics 4, Physics 11.

ELECTRICAL ENGINEERING.*

PROFESSOR THOMAS AND MR. LOVE.

1. *Elements of Electrical Engineering*.—A theoretical course covering the fundamental principles of direct currents and their application in direct current machinery. The text used is Franklin & Esty's *Elements of Electrical Engineering*, Volume I, and is supplemented by lectures and assigned work in Lyon's *Problems in Electrical Engineering*. Equivalent to Physics 11. *Required of Electrical Engineers*. First half, Junior year, credit 4 hours.
2. *Alternating-Current Theory*.—Prerequisite, Electrical Engineering 1. A continuation of Electrical 1, taking up alternating current theory and application in alternating current circuits. Texts: Jackson's "*Alternating Currents and Alternating Current Machinery*," Chapters I to IX inclusive, and Lyon's *Problems in Electrical Engineering*. The text book work is supplemented by lectures. Equivalent to Physics 12. *Required of Electrical Engineers*. Second half, Junior year, credit 3 hours.
3. *Advanced Electrical Laboratory*.—Magnetic measurements, the measurement of conductivity and insulation resistance, the calibration of direct-current instruments and tests such as the location of faults in telephone circuits, etc. Equivalent to Physics 13 (p. 100). First half, Junior year, two 3-hour periods, credit 2 hours.
4. *Alternating-Current Measurements*.—Prerequisite, Electrical Engineering 2. The calibration of commercial alternating-current instruments for the measurement of current, electromotive force, and power. Also studies of the instrument transformer, phase and frequency meters, and of inductance, effective resistance, and resonance. The measurement of power and the phase relations of polyphase circuits. First half, Senior year, one 3-hour period, credit 1 hour.
5. *Alternating-Current Machinery*.—Prerequisite, Electrical Engineering 1 and 2. A lecture course on alternating current ma-

*Laboratory Fees: See footnote, p. 75.

chinery, including generators, motors, converters, and transformers. The lectures are supplemented with problem work and assigned reading in Jackson's *"Alternating Currents and Alternating Current Machinery,"* McAllister, Karapetoff, Steinmetz, and the technical press. Required of Senior Electrical Engineers. Throughout the Senior year. 3 hours each half-year.

6. *Electrical Measuring Instruments.*—A course of study in the theory of various direct-current measuring instruments, including those used in Electrical 3. Text: *Electrical Meterman's Handbook*, published by the National Electric Light Association. The text is supplemented by lectures. Second half, Junior year, 1 hour.
7. *Alternating-Current Instruments.*—The theory of various types of alternating-current measuring instruments, including the instruments used in Electrical 4. A continuation of Electrical 6, using the same text. First half, Senior year, 1 hour.
8. *Direct-Current Electrical Engineering Laboratory.*—Prerequisite, Electrical Engineering 1. The work of this course includes the ordinary tests of direct-current machinery, such as efficiency by brake for motors, by loading for generators, and by the stray-power method, heat runs, regulation and parallel running, and the analysis of losses. Each student presents a carefully prepared preliminary report covering the theory of the experiment and the method of procedure, which is corrected and must be approved before the experiment may be performed. Each student also presents a final report which in addition to the working up of the experiment includes an analytical discussion of the experiment and its results. Equivalent to Physics 14. Second half, Junior year, one afternoon for preliminary reports and one 3-hour laboratory period, credit 3 hours.
9. *Electrical Distribution.*—Prerequisites, Electrical Engineering 1 and 2. A lecture course dealing with commercial and technical features of the generation, distribution, and consumption of electrical energy. A portion of the work is covered by text-book assignments to Chapters VII. to X. of Vol. I and

Chapters XV. and XVI. of Vol. II of Franklin and Esty. First half, Senior year, 2 hours.

10. *Electrical Engineering*.—Prerequisite, Electrical Engineering 9. A lecture course dealing with some of the problems and systems of long-distance, high-tension transmission and electric traction. This lecture course is supplemented with problems. In the last part of the term, Steinmetz's *Transient Electric Phenomena* is used as a text. Second half, Senior year, 2 hours.
11. *Alternating-Current Electrical Engineering Laboratory*.—Electrical Engineering 5 must precede or accompany this course. The work of this course includes such tests as regulation from open and short-circuit characteristics, regulation and efficiency by loading, efficiency by the retardation method of analyzing losses, and the parallel operation of alternators; synchronous motor tests, induction motor tests, and tests of the losses and regulation of transformers, both by loading and by "loading back." Throughout the Senior year. One afternoon for preliminary reports, and one 3-hour laboratory period, each half-year, credit 3 hours.
12. *Dynamo Design*.—Prerequisites, Electrical Engineering 1 and 2. A lecture and class room course, considering the materials of construction, armature windings, and the principles of calculation in the design of direct-current machines and transformers. Text: Gray's *Electrical Machine Design*. First half, Senior year, 1 hour.
13. *Electrical References*.—A course of reference work in connection with the important articles in the current technical and scientific periodicals. Assigned readings and abstracts. Throughout the Senior year. Each half-year, 1 hour.
14. *Electrical Engineering for Civil and Mining Engineers*.—This course, required of all engineers except Electrical Engineers, is given throughout the Senior year. It covers the principles of both direct and alternating currents and their application in machines and transmission. Texts: Franklin & Esty's *Elements of Electrical Engineering*, Vol. I, and Jackson's

Alternating Currents and Alternating-Current Machinery.
Each half-year, 3 hours.

15. *Power Plants.*—A study of steam boilers, reciprocating engines and their valve gears, and turbines. The construction, operation, and testing of the machines and their auxiliaries, and the conditions affecting their economical use are considered in detail. Lectures, problems, and assignments in Hutton's *Mechanical Engineering of Power Plants*. *Required of all Engineers.* Second half, Junior year, 2 hours.
16. *Thermodynamics.*—A study of the principles and concepts of thermodynamics which are essential to the study of the construction and operation of the steam engine, steam turbine, air compressor, gas engine, and their auxiliaries. *Required of all Engineers.* First half, Junior year, 2 hours.
17. *Engineering Inspections.*—An excursion course designed to acquaint the student with modern practice in electrical and mechanical engineering by visiting power and manufacturing plants. Four or five days are spent each year on one of these trips. One trip is to Denver and vicinity and the alternate trip includes Pueblo, Cañon City, and the Cripple Creek District. A written report on each trip is required. *Required of Junior and Senior Electrical Engineers.* Credit 1 hour for both trips.

Laboratory Fees per half-year: Electrical Engineering 4, \$3.00; Electrical Engineering 3, \$4.00; Electrical Engineering 8 and 11, \$5.00.

ENGLISH.

PROFESSOR PARSONS.

4. †*American Literature.*—Irving, Cooper, Poe, Bryant, Hawthorne, Longfellow, Emerson, Lowell, Holmes, Whittier. Second half-year, 3 hours. Given in 1916-'17 and alternate years.
9. †*The English Drama: Shakespeare.*—The principal plays read chronologically. Second half-year, 3 hours. Given in 1915-'16 and alternate years.

†In addition to the composition courses, 1 and 2, one literature course is required of all candidates for the A. B. degree. The selection may be made from courses 4, 5, 9, 12, 13, 16, 17 and 19.

11. ***Milton*.—Poetry and Prose. First half-year, 3 hours. Given in 1915-'16 and alternate years.
12. *†*English Poetry from Dryden to Burns*.—First half-year, 3 hours. Given in 1916-'17 and alternate years.
35. *Wordsworth*.—Second half-year, 2 hours. Given in 1916-'17 and alternate years.

PROFESSORS MOTTEN, NOYES, AND WOODBRIDGE, MISS BANNING.

1. *Rhetoric and Composition*.—Elementary Course. Required reading, chosen to represent the principal literary types. Required of all Freshmen. Each half-year, 3 hours.

PROFESSORS NOYES AND WOODBRIDGE.

2. **The Greek Epic*.—A course designed to provide a foundation for later literary studies. Lang, Leaf and Myers' *Iliad* and Palmer's *Odyssey* are used. Frequent themes. Required of all Sophomores who are candidates for the degree of A.B., except those in the Department of Business Administration and Banking. First half-year, 3 hours.
23. *Old English*.—The beginnings of English Literature. Reading is begun at once and the study is made as literary in character as possible. First half-year, 3 hours. Given in 1916-'17 and alternate years.
24. *Old English*.—*Beowulf*. Prerequisite, English 23. Second half-year, 3 hours. Given in 1916-'17, or as arranged.

PROFESSOR MOTTEN.

5. †*Outline History of English Literature*.—First half-year, 3 hours. Given in 1916-'17 and alternate years.
13. *†*Coleridge, Byron, Shelley, Keats*.—Second half-year, 3 hours. Given in 1916-'17 and alternate years.
14. ***Tennyson*.—First half-year, 3 hours.

*Not open to Freshmen.

**Not open to Freshmen or Sophomores.

†See note on p. 75.

15. ***Browning*. Second half-year, 3 hours.
18. ***Poetics*.—A special study of the lyric. Second half-year, 3 hours. Given in 1915-'16 and alternate years.
25. ***Teachers' Course*.—A study of the classics taught in the grades and high school. Instruction as to methods, texts, references. Practice teaching. Second half-year, 3 hours.
27. **Argument*.—Weekly themes. Supplementary reading. First half-year, 3 hours. Given in 1915-'16 and alternate years.
28. ***Browning*.—Advanced course. Prerequisite, English 15. The Ring and the Book and the dramas. First half-year, 2 hours. Given in 1915-'16 and alternate years.
31. **Business English*.—Weekly themes. Supplementary reading. *Required course for Sophomores in the Department of Business Administration and Banking*. First half-year, 3 hours.

PROFESSOR NOYES.

During 1915-'16 Professor Noyes has been absent as exchange professor at Harvard University, and his work has been taken by Assistant Professor Edward A. Thurber.

6. *Chaucer*.—The principal poems read critically in class. Life and thought of the times. First half-year, 3 hours. MR. THURBER.
19. *†*Nineteenth Century Novelists*.—Jane Austen, Scott, Dickens, Thackeray, George Eliot, Stevenson. Second half-year, 3 hours. Given in 1916-'17 and alternate years.
20. *Greek Drama for English Readers*.—Literary study of twelve or more dramas of Æschylus, Sophocles, and Euripides, in poetic translation; lectures on the Greek Theater and on Greek Art. Second half-year, 3 hours. Open to Freshmen only in case they have had Latin 9 or English 2. Given in 1915-'16 and alternate years.

*Not open to Freshmen.

**Not open to Freshmen or Sophomores.

†See note on p. 75.

26. **Description and Exposition*.—A careful study of methods both by analysis and by practice. Weekly themes. A course in advanced composition. Class limited to fifteen. Offered as an alternate to Course 29, in 1915-'16. Second half-year, 3 hours. Students wishing to take this course must obtain the previous consent of the instructor.
29. **Representative Essays in Modern Thought*.—Essays by Arnold, Huxley, Mill, James, Morley, Mallock, Tyndall, Dole, Hadley, Harrison, Morris, Wallace or others. Occasional themes. Second half-year, 3 hours. Offered in 1916-'17.
32. **Russian Novels*.—A selection of the novels of Gogol, Dostoevsky, Turgenev, and Tolstoy. Lectures and discussions. Second half-year, 3 hours. MR. THURBER.
33. **Modern Drama*.—The work will begin with a reading of three or four of Ibsen's plays to illustrate the tendencies of the modern drama. Contemporary plays—Shaw, Galsworthy, etc. Second half-year, 3 hours. MR. THURBER.

PROFESSOR WOODBRIDGE.

3. *Advanced Composition*.—Prerequisite, Course 2. Second half-year, 2 class exercises, credit 3 hours.
7. **The English Drama: from the beginning to the death of Marlowe*.—Principles and development. First half-year, 3 hours. Given in 1916-'17 and alternate years.
10. *Shakespeare*.—A careful study of the language of three or four plays. Second half-year, 3 hours.
16. *†*Eighteenth Century Prose*.—First half-year, 3 hours. Given in 1915-'16 and alternate years.
17. *†*Nineteenth Century Prose, exclusive of fiction*.—J. S. Mill, Carlyle, Newman, Arnold, Ruskin, Pater. Second half-year, 3 hours. Given in 1915-'16 and alternate years.
21. ***Introduction to Literary Criticism*.—Reading and discussion of nineteenth century essays, chosen to represent the most important types of criticism. Occasional themes. First half-year, 3 hours. Given in 1916-'17 and alternate years.

*Not open to Freshmen.

**Not open to Freshmen or Sophomores.

†See note on p. 75.

22. ***Outline History of Literary Criticism*.—A survey of critical standards from Aristotle to Sainte-Beuve. Second half-year, 3 hours. Given in 1916-'17 and alternate years.

**Not open to Freshmen or Sophomores.

FORESTRY.

PROFESSOR TERRY.

1. *Forest Mensuration*.—The use and construction of log rules, the determination of the contents of logs in board, cubic, and cord measure; the contents of standing trees and exact methods of determining the contents of whole stands. The construction and use of volume and yield tables; the increment in diameter, height, and volume of single trees and whole stands; the determination of the age of single trees and stands. Lectures 5 hours, and field work. First half of the fall term. Text-book: Graves' *Forest Mensuration*.
2. *Forest Surveying and Timber Estimating*.—Methods of making forest maps showing types and topography. Plane table and traverse board methods, measuring distances by stadia, chain, or pacing. Use of aneroid barometer, hand level and clinometer. Different methods of estimating timber. After a number of small areas in the Manitou Forest have been estimated by intensive methods, camping trips are made to different parts of the Pike National Forest and large tracts of timber are estimated and mapped. Forest Service reconnaissance methods are compared with other methods of timber cruising. Last half of the fall term. Graves' *Mensuration*; Cary's *Handbook for Northern Woodsmen*, and *The Woodsman's Handbook*, published by the Forest Service, are used for text and reference.
3. *Dendrology*.—Monographic study of the important forest trees of the United States; their classification, identification, distribution and silvical characteristics. During the fall, field trips will be taken to familiarize the students with the forest flora in the Manitou Forest and surrounding region. The dis-

tribution of forest types in this part of the Rocky Mountains and the requirements of the species composing these types will be studied in their natural habitat. Lectures or recitations 5 hours, 6 hours of laboratory during the winter term.

4. *Wood Technology*.—The structural, mechanical, physical and chemical properties of wood, including timber-testing on Olsen and Riehle machines. The identification of the more important commercial woods. Both microscopic and gross structure are studied. Methods of wood-preservation. Lectures 2 hours and laboratory 4 hours during the winter term.
5. *Silviculture*.—The physical foundations of silviculture—influence of temperature, light, moisture, soils, and other site factors on forest growth. The principal silvicultural systems, both of natural and of artificial regeneration, and the adaptability of these systems to American conditions. Thinnings and improvement cuttings. Methods of artificial forestation; direct seeding, planting, and the management of forest nurseries. Lectures 3 hours, and assigned readings during the winter term.
6. *Forest Protection*.
 - (a) *General Protection*.—Protection from fire, animals, and adverse climatic influences.
 - (b) *Forest Entomology*.—A study of the life histories and habits of insects injurious to forest trees and products. Identification and methods of control.
 - (c) *Diseases of Trees*.—Injuries to trees caused by parasitic fungi; also the causes and effects of wounds and the treatment of such injuries. The course includes a consideration of normal and pathological physiology. Field investigations of specific cases of injury by insects, fungi, and other agencies. During the fall and spring terms. Lectures or recitations 2 hours, and assigned readings during the winter term.
7. *Silvicultural Operations*.—During the spring term the students will receive practice in making thinnings and improvement cuttings, and in conducting other silvical investigations in the

Manitou Forest. Experiments in different methods of direct sowing and planting will be carried on. Each student will prepare a planting plan for a portion of the Manitou Forest. Three or four weeks of the spring term will be spent in nursery work at the Forest Service Nursery at Monument, Colorado, under the direction of the Nursery Manager. (Monument is a half-hour's ride by rail from Colorado Springs.)

8. *Forest Improvement Work.*—The location and construction of forest roads, trails, bridges, telephone lines, fire lines, lookout stations, ranger stations, and other permanent improvement work on the National Forests, will be studied by lectures, assigned readings and inspection. Lectures 2 hours during the fall term.
9. *Forest Management.*—The valuation of forest land, methods of regulating the yield, and the preparation and execution of working-plans for the management of forest property. The students will make a practical working-plan for a portion of the Manitou Forest, and from year to year each class will also help to execute the provisions of the general working-plan for the whole Forest. Lectures, field and office work daily during the fall term.
10. *Forest Utilization.*—The development of the lumber industry in the United States. Methods and costs of lumbering, milling, and marketing in the different forest regions. Minor forest products. Lectures or recitations 5 hours a week, and assigned reading during the winter term.
11. *Forest Geography.*—The forest regions of the United States; detailed descriptions of the more important forest types and of commercial tree species; methods of silviculture and management; the National Forests; a few lectures on the forests of Canada, Alaska, the Hawaiian and Philippine Islands, and Mexico. The physiography of the United States will be considered in connection with the forest regions. The meteorology and the climatology of the United States will be treated in a general way, especially in their relation to forest growth and distribution. This course will also provide a comprehensive review of the courses in Dendrology and Silviculture,

which will be of value to students preparing for the civil service examination. Lectures or recitations 5 hours a week, and assigned readings during the winter term.

12. *Forest Policy*.—History of the development of forest policies and administrative methods under the influence of economic and political conditions; forest legislation and administration of selected foreign countries; federal and state forest laws; the organization of the Forest Service and its administration of the National Forests. Forest taxation. Fernow's *History of Forestry* and *Economics of Forestry* are used for reference. Lectures or recitations 3 hours, and assigned readings during the winter term.
13. *Lumbering Operations*.—The Senior class will spend the spring term on some timber tract or tracts where extensive logging and saw-milling operations are in progress. They will study these methods in detail, considering the costs of the various operations, business organization and methods, efficiency of labor and of equipment. They will also estimate the timber and make a logging plan for the tract. The work will round out and also comprise a resumé of the courses in Forest Surveying and Estimating, Forest Management and Forest Utilization.

GEOLOGY.

1. *General Geology*.—Prerequisite, Elementary Chemistry. Dynamical, Structural, and Historical Geology. Lectures, class discussions, laboratory work, and field excursions. The student, though not required to do so, is advised to elect Mineralogy (Geology 2) and Zoology (Biology 1b) before taking Geology 1, or at the same time with it. Text: Chamberlin and Salisbury's *College Geology*. Each half-year, 3 hours.
2. *Mineralogy*.—Prerequisite, Elementary Chemistry. Required for Geology 6. The economic or ore classification of minerals is used, and the time is devoted largely to laboratory work in Descriptive and Determinative Mineralogy. Text: Moses and Parsons' *Mineralogy, Crystallography, and Blowpipe Analysis*. Laboratory fee, \$2.00. Uniform individual working outfits are furnished at cost. Each half-year, 3 hours.

3. *Economic Geology*.—Prerequisite, Geology 1. Lectures, class discussions, and required reading. The geology and mineralogy of the ore deposits of the United States (gold, silver, copper, lead, zinc, iron). The greater part of the second half-year is devoted to the consideration of coal, building stones, and other important non-metallic minerals. In the spring there are voluntary field excursions to mining localities. Text: Ries's *Economic Geology of the United States*. Each half-year, 3 hours.
4. *Invertebrate Paleontology*.—Lectures, laboratory, and field work. Systematic study of the chief classes of the invertebrates by means of fossils, with special attention to the structure and development of the trilobites and brachiopods. Collections are made in the field to afford training in the identification of geological horizons. First half-year, 3 hours. Given in 1916-'17 and alternate years.
5. *Vertebrate Paleontology*.—Lectures, laboratory work on the museum collections, and required reading on the main lines of mammalian descent from the Eocene to recent time. First half-year, 3 hours. Given in 1915-'16 and alternate years.
6. *Petrography*.—Prerequisites, Geology 1 and 2. Lectures and laboratory work with the microscope on the commoner rock-forming minerals and the principal rock types. Second half-year, 3 hours.
7. *Field Geology*.—The systematic investigation of the topography, stratigraphy, and paleontology of the Colorado Springs region, with the preparation of maps and a report. Each half-year. Credit in proportion to time given and results attained.

GERMAN LANGUAGE AND LITERATURE.

PROFESSOR HOWE, ASSISTANT PROFESSOR SAHM, MISS KELLERMANN.

1. *Elementary Course*.—Grammar, Reading, Composition, Conversation. Andersen's *Märchen*; *Immensee*; *Germelshausen*; "direct method." Each half-year, 3 hours.
2. *Intermediate Course*.—Prerequisite, German 1. Selected texts in poetry and prose with instruction by the "direct method." Each half-year, 3 hours.

3. *Scientific German*.—Prerequisite, German 1. For Engineering and Forestry students. Each half-year, 2 hours.
4. *Composition and Conversation*.—Prerequisite, German 2. First half-year, 2 hours.
5. *Advanced Composition and Conversation*.—Prerequisite, German 4. Second half-year, 2 hours.
6. *German Lyrics and Ballads*.—Prerequisite, German 2. First half-year, 2 hours.
7. *Lessing*.—Prerequisite, German 4 or 6. *Emilia Galotti*, *Nathan der Weise*; biographical sketch. Second half-year, 2 hours.

ADVANCED COURSES.

8. *Schiller*.—Prerequisite, German 5. *Don Carlos*, *Wallenstein*, *Die Braut von Messina*, *Maria Stuart*, *Die Jungfrau von Orleans*, *Wilhelm Tell*, *Schillers Briefe (Auswahl)*, *Philosophische Schriften (Auswahl)*, *Aus deutschen Lesebüchern V. 2 and 3*, Poems, biography of Schiller. Conducted in German. Each half-year, 2 hours. Given in 1915-'16 and alternate years.
9. *Goethe*.—Prerequisite, German 5. *Die Laune des Verliebten*, *Die Mitschuldigen*, *Götz von Berlichingen*, *Die Leiden des jungen Werthers*, *Clavigo*, *Stella*, *Egmont*, *Iphigenie auf Tauris*, *Torquato Tasso*, *Hermann und Dorothea*, *Faust*; *Gedichte (Auswahl)*, *Briefe, (Auswahl)*, *Italienische Reise (Rom)*; *Aus deutschen Lesebüchern V. 1*; Bielschowsky's *Goethe*. Conducted in German. Each half-year, 2 hours. Given in 1916-'17 and alternate years.
11. *The German Drama of the Nineteenth Century*.—Prerequisite, German 5. Kleist, Grillparzer, Hebbel, Ludwig; Gutzkow, Wildenbruch, Fulda; Sudermann, Hauptmann. Lectures in German. Especial attention will be given to the works of Kleist, Grillparzer and Hebbel. Conducted in German. Each half-year, 2 hours. Given in 1915-'16 and alternate years.
12. *Teachers' Course*.—Prerequisites, German 5 and at least one advanced course. A study of German pronunciation and grammar from the standpoint of the teacher. Instruction as to

methods, texts, and works of reference. Each half-year, 1 hour.

13. *Current German Literature*.—Required of students who major in German. Each half-year, 1 hour.
14. *Brief History of the German Literature from the Old High Period on*.—Prerequisite, German 5. Recitations on Stroebe und Whitney, *Geschichte der deutschen Litteratur*; reports and discussions on Scherer, *Geschichte der deutschen Litteratur*, and Francke, *History of German Literature*; Heydtmann-Clausnitzer, *Deutsches Lesebuch für Lehrerseminare I*. From Lessing on one or more works of the leading German authors will be read, and papers on the same presented and discussed in class. Conducted in German. Each half-year, 2 hours. Given in 1916-'17 and alternate years.
15. *The German Drama from Lessing to the Present Time*. Knowledge of German is not necessary for the course; dramas will be read in English translation. One half-year, 2 hours. Given in 1916-'17.

NOTE:—Any of the advanced courses may be taken by candidates for the Master's Degree, but in every case a greater amount of work will be required of such candidates than of undergraduate students.

GRAPHICS.

ASSISTANT PROFESSOR MOORE.

In the Freshman and Sophomore years, students are expected to devote more time to drawing than the number of hours assigned in the statements given below, but may do the extra work at such hours as suit their convenience.

Students in all engineering courses are expected to provide themselves with a good and complete set of drawing instruments—design and make to be approved by the instructor.

1. *Elements of Drawing*.—This course includes elementary exercises to develop facility in the use of the instruments, selected geometrical problems, cross-sections, shading with the right line and the bow pen, conventional representations, mathematical curves, cycloidal and other motion curves, isometric,

oblique and orthographic projections, working drawings, tracings, the form and proportions of standard letters, both free-hand and ruled, methods of spacing and laying out titles. First half, Freshman year, 6 hours, credit 2 hours. *Required of all Engineers.*

2. *Descriptive Geometry.*—The work consists of recitations from text-books and the graphic solution of problems. After the necessary elementary problems, special attention is given to the practical side of this subject, in its relation to stereotomy, pattern-making, sheet metal work, architecture, mine surveying, and machine drawing. First half, Freshman year, 1 hour, credit 1 hour; second half, Freshman year, 8 hours, credit 5 hours. *Required of all Engineers.*
3. *Machine Design.*—Includes recitations from text-books, the copying and tracing of machine drawings, drawing to scale from models and machine parts, working, detail, and assembly drawings, laying out tooth-wheel gearings, and the making of original working drawings from specifications. First half, Sophomore year, 4 hours, credit 2 hours. *Required of all Engineers.*
4. *Graphic Statics.*—This course includes the study of forces, stresses, couples and moments of inertia, and is introductory to the later course on Theory of Trusses. Recitations from text-books are followed by the application of the principles in the solution of practical problems in roof trusses, involving permanent and temporary loads, snow loads, and wind pressures. Second half, Sophomore year; first half-term, 2 hours per week; second half-term, 4 hours per week; credit 2 hours. *Required of Civil Engineers.*
5. *Theory of Mechanism.*—The course consists of text-book recitations on theoretical mechanism, motion and interaction of machine parts, mathematical problems in machine design, tooth gearing, link motions, etc., with drawing of plates illustrating the practical application of the problems. Second half, Sophomore year; first half-term, 2 hours; second half-term, 4 hours; credit 2 hours. *Required of Electrical Engineers.*

6. *Foresters' Course in Elements of Drawing*.—This course consists of exercises selected from the Engineers' Course, Graphics 1. It is intended to prepare and fit the Forestry students for the work of making and lettering maps. This course is a prerequisite for Civil 1, Civil 201, and Forest Mensuration. First half, Freshman year, 2 hours, credit 1 hour. *Required of all Forestry Students.*

GREEK.

PROFESSOR GILE.

1. *Elementary Course*.—Designed to cover the entrance requirements with sufficient fullness to enable a student to enter Greek 2, provided he complete privately during the summer the first four books of the *Anabasis*. Each half-year, 3 hours.
2. Homer, selections from the *Odyssey* and *Iliad* in the original, and the whole of both poems in translation; Plato, *Apology* and *Crito*; Herodotus, selections. Each half-year, 3 hours.
3. *Drama*. Æschylus, *The Septem* and *Prometheus*; Sophocles, *Antigone*; the remainder of Æschylus' and Sophocles' plays in translation; Euripides, *Alcestis* and *Medea*. Each half-year, 3 hours.
4. *History*.
 - (a) Herodotus; careful study of the period of the Persian Wars. Readings from the dramatists for further illustration of the life of the period; or,
 - (b) Thucydides, the Sicilian Expedition. Parallel readings in Curtius, Grote, and other modern historians. Selections from Plutarch's *Lives*. One-half year, 3 hours.
5. *Philosophy*.—Plato, *Phædo*. Selections from other dialogues, and from the works of Xenophon. Zeller's *Socrates and the Socratic Schools*. One half-year, 3 hours.
6. *Epic and Lyric Poetry*.—Homer, Hesiod, and Pindar. One half-year, 3 hours.
7. *A Course Designed for Teachers*.—Selections from Xenophon;

composition; careful grammatical study. One half-year, 3 hours.

8. *New Testament Greek*.—Open to students who have had one year of Greek. Second half-year, 3 hours.

NOTE:—For a course in Greek Drama for English readers, see English 20; for the classical epic in translation, see English 2.

HISTORY.

PROFESSOR PARISH.

10. *General European History*.—From the Barbaric Invasions to the close of the Thirty Years War. Open to all students and advised as the preliminary course in history. Each half-year, 3 hours.
1. **Modern European History*.—From the close of the Thirty Years War to the present time. Open to those who have had History 10. Each half-year, 2 hours. Given in 1916-'17 and alternate years.
2. *American History*.—This course covers the entire period of American history and deals with the planting of the colonies and their struggle for independence, the struggle of the United States for nationality, and the development of the nation as a world power. Not open to Freshmen. Each half-year, 3 hours.
3. *English History*.—A survey of the political and social history of England from the earliest time to the present. Open to all students. Each half-year, 3 hours. Given in 1916-'17 and alternate years.
4. *The French Revolution and Napoleonic Era*.—A study of the political, social, and economic causes of the Revolution, and of the events, institutions, and political philosophy of the period from 1789 to 1815. Open to those who have had History 10 or 3. First half-year, 2 hours. Given in 1915-'16 and alternate years.
5. **Europe since 1815*.—This course covers the development and

*A student shall not receive credit for both History 5 and the second semester of History 1.

inter-relation of the leading countries of Europe within the last hundred years, including a consideration of the race element and the balance of power in European affairs. Open to those who have had History 10 or 3. Second half-year, 2 hours. Given in 1915-'16 and alternate years.

8. *Roman History*.—Special emphasis will be laid on the history and culture of the late Republic and early Empire. Second half-year, 2 hours. Given in 1915-'16 and alternate years.
9. *Seminar Course in American or European History*.—Subject to be chosen at the beginning of the year. Open only to advanced students and required of those majoring in history. Each half-year, 2 hours.
12. *History of the West*.—A study of the exploration of the North American continent and the westward growth of the United States. Open to those who have had History 2. Each half-year, 2 hours. Given in 1916-'17 and alternate years.
13. *Constitutional History of England*.—A study of some phase of the development of the constitution of England, with considerable time given to the study of constitutional documents. Advised for those intending to study law. Open to those who have had History 3. First half-year, 2 hours. Given in 1915-'16 and alternate years.
14. *British Colonial History*.—A study of the expansion of Great Britain and of her colonial policy with particular attention to her possessions in America. Open to those who have had History 3. Second half-year, 2 hours. Given in 1915-'16 and alternate years.

LATIN.

PROFESSOR GILE.

1. Cicero, *De Senectute*, *De Amicitia*, *Selected Letters*; Horace, *Odes*. Each half-year, 3 hours.
2. Horace, *Selections from the Epistles and Satires*; Tacitus, *Germania* and *Agricola*; Terence, *Phormio*; Plautus, *Captivi*; Pliny, *Selected Letters*. Each half-year, 3 hours.

3. *Drama*.—Selected plays of Plautus and Terence; history and characteristics of the Roman Drama. One-half year, 3 hours.
4. *Catullus and the Elegiac Poets*.—One half-year, 3 hours.
5. *Satire*.—History and characteristics of Roman Satire. Selections from Horace, Persius, Juvenal. Parallel readings in English literature. One-half year, 3 hours.
6. *Prose Literature of the Empire*.—Gudeman's Selections. Each half-year, 3 hours.
7. Virgil. *The Æneid*, Books VII.-XII.; the *Bucolics*; and selections from the *Georgics*. One half-year, 3 hours.
8. *A Course Designed for Teachers*.—Selections from Cæsar and Cicero; composition; careful grammatical study. One half-year, 3 hours.
9. *A Course in Mythology*.—Lectures, occasionally illustrated, and collateral readings. One half-year, 3 hours.
10. *Roman Life*.—Prerequisites, Latin 1 and 2; open to Juniors and Seniors. One half-year, 3 hours.

NOTE:—For a course in Roman History, see History 8; for the classical epic in translation, see English 2.

MATHEMATICS.

PROFESSOR CAJORI, PROFESSOR ALBRIGHT.

1. **Algebra*.—Graphs; Variation; the Binomial Theorem; Undetermined Coefficients; Permutations and Combinations; Theory of Limits; Series; Theory of Equations. First half-year, 3 hours.
2. **Solid and Spherical Geometry*.—Planes and Lines in Space; Polyhedra, the Cylinder, Cone and Sphere; Spherical Triangles. Second half-year, 2 hours.
3. **Plane Trigonometry*.—Logarithms; the functions of one and two angles; inverse functions; the solution of triangles; De Moivre's theorem; simple applications. Second half-year, 3 hours.

*Courses 1, 2 and 3 required of Freshmen.

PROFESSOR CAJORI.

4. *Analytic Geometry (Elementary)*.—Plane loci of first and second order. Higher plane curves. First half-year, 3 hours.
5. *Analytic Geometry (More Advanced)*.—More thorough study of plane loci; solid analytic geometry. Second half-year, 2 hours.
6. *Calculus, Differential and Integral*.—First half-year, 3 hours. Second half-year, 4 hours.
7. *History and Logic of Mathematics*.—This course is planned especially for those who are fitting themselves to be teachers of mathematics. One half-year, 2 hours.
8. **Projective Geometry*.—One half-year, 3 hours.
9. **Theory of Equations*.—One half-year, 3 hours.
10. **Differential Equations*.—2 hours.
11. **Determinants*.—One half-year, 2 hours.
13. **Vector Analysis*.—One-half year, 3 hours.

*Of Courses 8, 9, 10, 11 and 13, only two are usually given in any one year.

PROFESSOR ALBRIGHT.

12. *Theoretical Mechanics*.—Prerequisite, Mathematics 6. This course is intended especially for students of engineering and mathematical physics. Each half-year, 3 hours.

NOTE:—For a course in Elementary Surveying, see Civil 1, p. 62.

MUSIC.

For courses in Music, including those counted toward a College Degree, see pp. 108-114.

PHILOSOPHY.

The required work in this department extends over the Junior and Senior Years, and gives the student a knowledge of the development of thought in the several departments of philosophy. The various seminary courses afford training in the study and discussion of important psychological, sociological, and ethical questions.

PRESIDENT SLOCUM, PROFESSOR BREITWIESER.

1. *Psychology and Logic*.—Required of all Juniors. Each half-year, 3 hours.

A. The first twenty-four weeks of the year are given to neurology and psychology, and the remaining twelve weeks to logic. The work of the first half-year includes the following topics:

(a) Introduction to psychology and philosophy.—

PRESIDENT SLOCUM.

(b) The anatomy and physiology of the nervous system as bearing on psychology.

(c) Instincts, attention, habit-formation, sensation, and perception.

B. The second half-year is devoted to the remaining topics in psychology and to logic.

In 1915-'16 Angell's *Psychology* was used as a text. The satisfactory performance of a number of experiments is required. Outside assigned readings and the preparation of papers on special topics are also included. The equipment of the psychological laboratory (p. 124) is drawn upon for demonstration material.

PRESIDENT SLOCUM.

2. *History of Philosophy*.—Required of all Seniors, open only to Seniors. Prerequisite, Philosophy 1. First half-year, 4 hours.

A. *Lectures, Recitations, and Conferences*.—3 hours.

(a) Study in Comparative Religions.

(b) Greek Philosophy. 20 lectures.

(c) Modern Philosophy. Lectures: (1) The Rise and Fall of Scholasticism; (2) The Beginnings of Modern Philosophy—Bacon and Descartes; (3) Spinoza; (4) Locke; (5) The Skeptical Movement in France; (6) Leibnitz; (7) Berke-

ley; (8) Hume; (9) Kant, the Critique of Pure Reason; (10) Kant, the Transcendent Element in his Philosophy; (11) Hegel; (12) Spencer—The Philosophy of Evolution.

B. *Metaphysical Seminary*.—1 hour.

Papers and discussion upon the following subjects:

- (a) Great Religions of the World.
- (b) Psychological Basis of Religious Faith.
- (c) Psychological Basis of Æsthetics.
- (d) Philosophical Thought in England during the Nineteenth Century.
- (e) Evolution: Its History, Development, and Results.

3. *Ethics*.—Required of all Seniors, open only to Seniors. Prerequisite, Philosophy 2. Second half-year, 4 hours.

A. *Theory of Morals*.—Lectures, theses, and discussions, 3 hours.

- (a) The Fundamental Principles of Ethics. 12 lectures.
- (b) Christian Ethics. 3 lectures.

B. *Ethical Seminary*.—1 hour.

Papers and discussion upon the following subjects:

- (a) Modern Social and Sociological Problems.
- (b) The Ethical View of Citizenship.
- (c) A Study of Educational Theories from an Ethical Standpoint.

4. *Modern German Philosophy*.—Second half, Senior year, 2 hours.

5. *The Philosophical Movement in England*.—Second half, Senior year, 2 hours.

MR. HASTINGS.

13. *The Evolution of Religious Thought*.—Second half-year, 2 hours.

- (1) Psychological Basis of Religion; (2) Spiritual Im-

port of Greek Philosophy; (3) Religious Development of the Hebrews; (4) Rise of Christianity; (5) Source and Substance of Revelation; (6) Paul and His Mission; (7) Fusion of Greek and Christian Thought; (8) Mediæval Conceptions of Christianity; (9) Spirit of the Renaissance; (10) Cardinal Principles of the Reformation; (11) Philosophical Awakening; (12) Eighteenth Century Conceptions of Religion; (13) Skepticism; (14) Voltaire and Rousseau; (15) Lessing and Freedom of Thought; (16) Philosophy of Kant; (17) German Idealism; (18) Mysticism; (19) Romanticism; (20) Goethe: Religion and Culture; (21) German Criticism of Dogma; (22) Coleridge and Wordsworth; (23) Carlyle and His Philosophy of Life; (24) Newman and the Church Revival; (25) Rise of the Critical Mind; (26) Comte and His Religion of Humanity; (27) Agnosticism; (28) Religious Import of Evolution; (29) Arnold and Ethical Idealism; (30) Martineau and Christian Theism; (31) Philosophical Idealism; (32) Present Day Tendencies in Religious Thought.

PROFESSOR BREITWIESER AND ASSISTANTS.

9. *Experimental Psychology*.—A laboratory course. Experimental methods and typical experiments both qualitative and quantitative. Psychological tests and their applications to school problems. For the equipment of the laboratory, see p. 124. Laboratory fee, \$2.50. 1 hour recitation, laboratory hours to be arranged, each half-year, credit 2 hours.—PROFESSOR BREITWIESER AND MR. GERLACH.
10. *Advanced Course in Psychology*.—Experimental work and reading from psychological literature. Open to students who have completed Philosophy 1. Each half-year, 2 hours.
11. *Mental Pathology and Hygiene*.—A study of normal and abnormal suggestion, fixed ideas, morbid-mindedness, insanity, hypnotism, hysteria, multiple personalities, faith cures, etc. Each half-year, 1 hour. Given in 1915-'16 and alternate years. Open to Juniors and Seniors.
12. *Psychology of Religion*.—Open to Juniors and Seniors only. Starbuck, James, Davenport, King, Ames, etc. The genetic

and functional points of view in the interpretation of the religious consciousness. First half-year, 1 hour. Given in 1916-'17 and alternate years.

15. *Social Psychology*.—A study of various texts in social psychology, discussions, and selected readings. Second half-year, 1 hour. Given in 1916-'17 and alternate years. Open to students who have had Philosophy 1.

PHYSICAL EDUCATION.

For the first time since the founding of Colorado College, it has now become possible to add to the regular course of instruction a fully equipped Department of Physical Education for men. The gift of the Frederick H. Cossitt Memorial, presented by his daughter, Mrs. A. D. Juillard, has provided Colorado College with a building that is not only adapted to meet the needs of the men as a center for their social life, recreation, and athletics, but is also unique among such buildings at American colleges. Besides the elaborate athletic and training quarters,—a large in-door gymnasium, with boxing and wrestling rooms, locker rooms, rubbing rooms, shower baths, etc.—there is a stadium, adapted for out-door sports, dramatic exhibitions, college "sings," and other gatherings, a dining hall with suitable kitchens, an assembly hall, and a Common Room. The building is thus adapted to every need of the life of college men; and more than that, as the center for general college receptions, it increases the general social facilities.

(For a more detailed account, see the special Cossitt Memorial pamphlet.)

Requirements for Men.

MR. ROTHGEB, DR. BLACKMAN, MR. HICKOX, AND ASSISTANTS.

The required work in this Department extends over the first three years of the College course; during the Freshman year, 3 hours a week, credit 1 hour each half-year, and during the Sophomore and the Junior years, 2 hours a week, credit 1 hour each half-year. Twice each year, just after registration in the fall and again near the end of the second half, every man in the Freshman, Sophomore, and Junior classes, and all others who enter competitive sports, are given physical examinations. In addition all

Freshmen and such others as have indicated need of it in previous examinations are looked over carefully by the College Physician. In this medical examination, abnormalities of the body are noted, and conditions of external and internal organs ascertained, special care being given to heart and lungs. The medical examinations may be supplemented by special examinations at the desire of student or examiner. The physical examination consists of physical measurements and strength tests. Complete records of these are carefully kept in files accessible to students. Averages are computed for all the men, and individual comparisons made of these records both with one another and with those at other colleges. The individual student is thus enabled to see his own deficiencies, and is given advice regarding the best methods of upbuilding as his particular needs may dictate.

Students found physically or organically defective are required to do special work in medical gymnastics, assigned as the medical and physical examinations may show it to be desirable. This work supplements and in some cases replaces the regular class work. It is carried on in the special exercise room provided for it.

MR. HICKOX AND ASSISTANTS.

1. *Physical Education* (Elementary).—Required of all Freshmen. Elementary work in marching, calisthenics, gymnastic dancing, heavy apparatus, and games of the competitive type. A combination of the Swedish and the German systems, leading to correct carriage, muscular co-ordination, knowledge of gymnastic nomenclature and form, and an appreciation of the value of regular exercise. The aim is a regular increase in scope, proficiency, and effects through graded and correlated courses. Tests are given as may be desirable during each term. In the fall and spring, out-of-door games are substituted for the in-door work. Each half-year, 3 hours, credit 1 hour.
2. *Physical Education* (Intermediate Course).—Required of all Sophomores. A continuation of Course 1, with wider scope, more varied methods, and greater emphasis on correctness and readiness of response. The exercises are more complex and require more highly developed muscular co-ordina-

tion. Introduction of light apparatus such as dumb bells and wands, more difficult steps in dancing, and practice in leadership of squad work. The classes are divided into squads according to proficiency. Each half-year, 2 hours, credit 1 hour.

3. *Physical Education* (Advanced Course).—Required of all Juniors. A continuation of Course 2, with a view to affording basis from which students may carry on the direction of physical work in secondary schools. Drills, methods, form, nomenclature, leadership, and execution are emphasized, and practice is given as leaders in Courses 1 and 2. Text books used: *Manual of Marching*, Cornell and Berry; *Gymnastic Nomenclature*, Y. M. C. A. of N. A.; *Gymnastic dancing*, Davidson; *Games*, Bancroft; excerpts from various texts through a reference bibliography. Each half-year, 2 hours, credit 1 hour.

MR. ROTHGEB, MR. HICKOX.

4. *Competitive Sports, Intramural and Intercollegiate*.—Elective for all students meeting college requirements. Members of squads and teams who are excused from Courses 1, 2, or 3 for competitive sports must attain satisfactory proficiency in the sport elected and be regularly at practice. This course includes intercollegiate, inter-class, inter-sectional, and campus league competition in all sports in season, viz.: football, soccer, field hockey, basketball, volley ball, indoor baseball, indoor hockey, wrestling, boxing, cross-country running, handball, tennis, baseball, track and field, and any other sport in which a sufficient number of students are interested to afford competition.

Requirements for Women.

DR. BLACKMAN, MISS DAVIS

The required work for women in the Department of Physical Education covers the Freshman, Sophomore, and Junior years. Three hours' work each week, credit one hour each semester, is required during the Freshman and Sophomore years, and two hours' work each week, credit one hour each semester, during the

Junior year. Medical and physical examinations are made on entrance and at the end of the second and third years, and records similar to those for the men are kept. Special exercise is prescribed for students showing defects of posture or physical inability to do the required amount of work. In the fall and spring, organized sports in the out-door gymnasium, managed by the Women's Athletic Association and under the direction of the instructor, take the place of the regular gymnastic work. From November 1st to May 1st one hour of dancing a week may be substituted for one hour of gymnastic work.

MISS DAVIS

1. *Physical Education*.—Preliminary work for Freshmen, 3 hours a week. Gymnastics, simple apparatus, group games.
2. *Physical Education*.—Intermediate work for Sophomores, 3 hours a week. Gymnastics, apparatus, team games.
3. *Physical Education*.—Advanced work for Juniors, 2 hours a week. Gymnastics, heavy apparatus, team games.
4. *Physical Education*.—Preliminary ball room dancing, 1 hour a week.
5. *Physical Education*.—
 - (a) Preliminary æsthetic dancing, 1 hour a week.
 - (b) Advanced æsthetic dancing, 1 hour a week.
5. *Physical Education*.—Folk dancing, 1 hour a week.

NOTE:—Full bloomers of dark blue serge and white sailor blouses are required. Short full skirts are required for out-door work. Ground Gripper gymnasium shoes are required.

PHYSICS.

PROFESSOR TILESTON.

1. *Elementary Physics*.—A non-mathematical course intended to acquaint the student with the facts, the methods, and the general principles of physical science. This course is designed to meet the needs of the men and women who wish to be familiar with the philosophy of Physics. Each student

is taught by continuous practice to give clear, concise descriptions and sketches of phenomena and mechanism met with in everyday life.

The lectures will be illustrated by lantern slides and by experiments of historical interest. Open to Freshmen. First half-year, 2 hours' lecture and one 4-hour laboratory period. credit 3 hours.

2. *Elementary Physics*.—This is a continuation of the preceding course. Prerequisite, Physics 1. Second half-year, credit 3 hours.
3. *General Physics*.—A study of the phenomena and laws of mechanics, wave motion, and heat. This course is designed to equip engineers, foresters, and medical students with a working knowledge of the basic principles of Physics. Instruction is given by lectures, recitations (Duff: *A Test Book of Physics*), frequent examinations, and daily problem work. In addition to the lectures and laboratory a personal conference is frequently held with each student to assist in clearing up his difficulties. Prerequisites, Algebra and Plane Trigonometry. First half-year, 3 hours' lecture, credit 3 hours.
4. *General Physics*.—A continuation of Course 3, extended into the study of the laws of electricity, magnetism, sound, and light. Prerequisite, Physics 3. Second half-year, credit 3 hours.
5. *Experimental Physics*.—This course acquaints the student with the theory and use of instruments of precision, and enables him to verify and apply the physical laws learned in Course 3. First half-year, 6 hours, credit 2 hours. Courses 3 and 5 should be elected at the same time.
6. *Experimental Physics*.—The laboratory work of Physics 5 is continued, and the experiments concern the subjects of electricity and light. Second half-year, credit 2 hours. A briefer course with a credit of 1 hour is given for Civil Engineers.
7. *Teachers' Course*.—A course for students expecting to teach high school physics. The student will prepare detailed note

books covering the entire problem, textbook, and laboratory work, of a typical course in high school physics. Special attention will be given to manipulation and construction of simple apparatus. An acquaintance with the leading text books in Physics and a study of pedagogical methods will form an essential part of the work. Prerequisites, Physics 1 and 2, or 3 and 4. Hours and credits will be arranged individually.

8. *Precision of Measurements*.—The theory and use of the slide-rule followed by a study of the nature and methods of elimination of errors in experimental work. This course is required of all students in Physics 6. Second half-year, credit 1 hour.
- 9 and 10. *Theory of Light*.—This course will consist of lectures, recitations, and laboratory work. The text used will be Wood's Physical Optics, supplemented by Preston and Edser. Prerequisites, Differential and Integral Calculus, and Physics 3, 4, 5, and 6. Each half-year, lectures 3 hours, credit 3 hours.

PROFESSOR THOMAS.

- 11 and 12. *Elements of Electrical Engineering, and Alternating-Current Theory*.—Equivalent to Electrical Engineering 1 and 2.
- 13 and 14. *Advanced Electrical Laboratory, and Direct-Current Electrical Engineering Laboratory*.—Equivalent to Electrical Engineering 3 and 8.

MR. LOVE.

- 15 and 16. *Thermodynamics and Power Plants*.—Equivalent to Electrical Engineering 16 and 15.

NOTE:—A major in Physics may be obtained by combining credit in Mathematics with credit in Physics.

LABORATORY FEES.

Course 1 or 2.....	\$2.00
Course 5 or 6.....	3.00

POLITICAL SCIENCE.

MR. ELLINGWOOD.

1. *The Elements of Political Science*.—The nature, origin, and evolution of the State. The organization and operation of government. The purpose of the State. Freshmen not admitted. First half-year, 3 hours.
2. **The History of Political Theories*.—Prerequisite, Political Science 1. The development of political thought from earliest times. First half-year, Plato to Hobbes; second half-year, Hobbes to Austin. Textbook, and readings in Plato, Aristotle, Hobbes, Locke, Montesquieu, Rousseau, Bentham, Austin, etc. Each half-year, 2 hours. Open only to Juniors and Seniors.
3. **Comparative Government*.—Prerequisite, Political Science 1. A comparison of the constitutions and forms of government of the United States, England, Germany, France, and Switzerland. Textbook and lectures. Each half-year, 2 hours. Open only to Juniors and Seniors.
4. **International Law*.—The general principles governing the intercourse of nations. Development of the idea of a *Ius Gentium*. Contributions of the United States to International Law. First half-year, the Law of Peace; second half-year, the Law of War. Each half-year, 3 hours. Open only to Juniors and Seniors.
5. **The History of American Diplomacy*.—Prerequisite, History 2. A survey of our foreign relations from 1776 to the present time. The development of our foreign policy, with emphasis upon the Monroe Doctrine. A special study of the more important treaties. Textbook, lectures, and collateral reading. Each half-year, 3 hours.
6. †*American Government*.—Prerequisite, History 2. The origin, structure, and development of national, State, and local governments in the United States. One half-year, 3 hours.

*Of courses 2, 3, 4, and 5, not more than one will be given in any one year.

†Of courses 6, 7, 8, and 9, not more than two will be given in any one year.

7. †*English Government*.—Prerequisite, History 3. The nature, structure, and operation of English government as it is to-day. One half-year, 3 hours.
8. †*State Government*.—Prerequisite, History 2. The constitutional basis of the government of the States. The transition from territory to State. A special study will be made of the admission of Colorado, the formation and content of its constitution, and its development to date. One half-year, 3 hours.
9. †*American Political Theories*.—Prerequisite, History 2. The development of American political ideas from the Colonial period to the present time. Particular emphasis upon recent tendencies. Text-book and lectures. One half-year, 3 hours.

†Of courses 6, 7, 8 and 9, not more than two will be given in any one year.

PUBLIC SPEAKING.†

1. *Declamations*.—Oral interpretations, declamations, dramatic reading; individual training. Each half-year, 1 hour.
2. *Oration and Speeches*.—Oral interpretation, discussions, orations, extemporaneous speeches, addresses; individual training. Second half-year, 2 hours.
3. *Debates*.—Lectures; argumentations; debates on social, economic, historical, and political questions. First half-year, 2 hours.

†See Oratorical and Debating Contests, p. 140.

ROMANCE LANGUAGES AND LITERATURES.

FRENCH LANGUAGE AND LITERATURE.

MISS WOLLASTON AND MR. LATIMER.

1. *Elementary Course*.—Fraser and Squair's *Shorter French Course*; Aldrich and Foster's *French Reader*; George Sand, *la Mare au diable*; Labiche et Martin, *le Voyage de M. Perichon*. Writing from dictation, and practice in speaking. Three divisions. Each half-year, 3 hours.

MISS CAMPBELL.

2. *Intermediate Course*.—Syntax and prose composition; oral work based on texts read; and the reading of the following works:

Alfred de Musset, *Pierre et Camille*; Anatole France, *le Livre de mon ami*; Maupassant, *Contes*; Molière, *le Bourgeois gentilhomme*; Bowen's *French Lyrics*. Lectures. In this course French is the language of the class room Two divisions. Each half-year, 3 hours.

For outside reading: About, *le Roi des montagnes*; Balzac, *Ursule Mirouet*, *le Père Goriot*, *Eugénie Grandet*; Dumas, *les Trois mousquetaires*, *la Tulipe noire*; Erckmann-Chatrian, *le Conscrit de 1813*, *Waterloo*; Feuillet, *le Roman d'un jeune homme pauvre*; Gréville, *Dosia*; Victor Hugo, *Notre Dame de Paris*; Mæterlinck, *la Vie des abeilles*; Malot, *Sans famille*; Ohnet, *le Maître de forge*; George Sand, *François le champi*, *les Maîtres sonneurs*, *Nanon*; Souvestre, *Un philosophe sous les toits*; Vigny, *Cinq-mars*. Each student is expected to read two of these works out of class, and pass examination upon them. Other standard works, if approved by the instructor, may be read in the place of those given in the list.

3. *Nineteenth Century Literature* (2 hours), and *Phonetics and Free Oral Composition* (1 hour).—The following works will be read in class: Victor Hugo, *Hernani*, *Poésies (extraits)*; Lamartine, *Méditations (extraits)*; Alfred de Musset, *On ne badine pas avec l'amour*, *Poésies (extraits)*; selected dramas and selections from prose fiction; Sainte-Beuve, *Selected Essays*; and parts of Lanson's *Histoire de la littérature française*. Lectures. Each half-year, 3 hours. Given in 1916-'17 and alternate years.

Outside Reading.—Each student is expected to read four of the following groups out of class, and pass examination upon them:

- (1) Mme. de La Fayette, *la Princesse de Clèves*, and Saint-Pierre, *Paul et Virginie*; (2) Chateaubriand, *Attala* and *René*; (3) Lamartine, *Graziella*; (4) Victor Hugo, *les Misérables (extraits)*, or *Notre Dame de Paris*; (5) Balzac, *Ursule Mirouet*, or *Eugénie Grandet*; (6) George Sand, *François le champi* or *les Maîtres sonneurs*; (7) Anatole France, *le Crime de Sylvestre Bonnard*; (8) Pierre Loti, *le*

Pêcheur d'Islande; (9) Mæterlinck, *les Aveugles*, *l'Intérieur*, and *l'Oiseau bleu*; (10) Rostand, *Cyrano de Bergerac*, or *Chantecler*.

4. *Classical French Literature* (2 hours), and *Advanced Prose Composition* (1 hour).—Prerequisites, French 1 and 2. The following works will be read in class: Warren's *French Prose of the XVII Century*; Corneille, *le Cid*, *Horace*; Racine, *Andromaque*, *Athalie*; Molière, *l'Avare*, *les Femmes savantes*; La Fontaine, *Fables*; Boileau, *l'art poétique*; and parts of Lanson's *Histoire de la littérature française*. Lectures. Each half-year, 3 hours. Given in 1915-'16 and alternate years.

Outside Reading.—Each student is expected to read several plays of Corneille, Racine, and Molière out of class, and pass examination upon them.

NOTE.—In Courses 3 and 4, French is the language of the class room.

PROFESSOR HILLS.

9. *The Comedies of Molière*.—Each half-year, 2 hours. Given in 1915-'16 and alternate years.
10. *French Drama*.—From the beginning of the nineteenth century to the present day. Each half-year, 2 hours. Given in 1916-'17 and alternate years.
8. *Old French*.—Clédât's edition of the *Chanson de Roland*. Each half-year, 1 hour. Open only to Juniors, Seniors, and graduates, who have had Latin and French 1, 2, and 3 or 4. Given in 1915-'16 and alternate years.

NOTE.—Courses 9, 10 and 8 are conducted in French. Students who take any of these courses are expected to have Lanson's *Histoire de la littérature française*, and an all-French dictionary (the *Littré-Beaujean* or the *Petit Larousse illustré*).

ITALIAN LANGUAGE AND LITERATURE.

PROFESSOR HILLS.

1. *Elementary Course*.—Grandgent's *Italian Grammar*; Bowen's *Italian Reader*; Goldoni, *Il vero amico* and *Un curioso accidente*. Each half-year, 2 hours. Given in 1915-'16 and alter-

nate years. Students may not elect Italian 1 and Spanish 1 in the same year.

2. *Italian Literature*.—Dante, *Vita Nuova* and *Divina Commedia*. Lectures and collateral reading. Each half-year, 3 hours. Given in 1916-'17 and alternate years.

SPANISH LANGUAGE AND LITERATURE.

MISS CAMPBELL AND MR. TAMAYO.

1. *Elementary Course*.—Hills and Ford's *Spanish Grammar*; Hills's *Spanish Tales for Beginners*; Alarcón, *El capitán Veneno*, Writing from dictation, and practice in speaking. Each half-year, 3 hours. Three divisions. Students may not elect Spanish 1 and Italian 1 in the same year.

MR. TAMAYO.

6. *Spanish Conversation*.—The class will meet twice a week, but only one hour's credit will be given. Each half-year, 1 hour.

PROFESSOR HILLS.

2. *Intermediate*.—Syntax and prose composition; oral work based on texts read; and the reading of the following works: Hills and Reinhardt's *Spanish Short Stories*; Cervantes, *Don Quijote* (extracts edited by Ford); Hills and Morley's *Spanish Lyrics*. Lectures. In this course Spanish is the language of the class room. Each half-year, 3 hours.
For outside reading: Alarcón, *El escándalo*, *El niño de la bola*, *El sombrero de tres picos*; Blasco Ibáñez, *La barraca*; "Caballero," *La gaviota*, *La familia de Alvareda*; Isaacs, *María*; Palacio Valdés, *La aldea perdida*, *La alegría del capitán Ribot*; Pardo Bazán, *De mi tierra*, *Pascual López*; Pereda, *Don Gonzalo González*, *Pedro Sánchez*; Pérez Galdós, *Doña Perfecta*, *Marianela*, *Gloria* (2 vols.); Juan Valera, *Doña Luz*, *Pepita Jiménez*, *El comendador Mendoza*. Each student is expected to read two of these works out of class, and pass examination upon them. Other standard works, if approved by the instructor, may be read in the place of those given in this list.

7. *Spanish Literature of the Nineteenth Century*.—Each half-year, 2 hours. Given in 1916-'17 and alternate years.
8. *Spanish Literature of the Siglo de Oro*.—Each half-year, 2 hours. Given in 1915-'16 and alternate years.
9. *Old Spanish*.—Menéndez Pidal's edition of the *Cantar del mío Cid*. Each half-year, 1 hour. Open only to Juniors, Seniors, and graduates, who have had Latin and French, and Spanish 1 and 2. Given in 1916-'17 and alternate years.
10. *Spanish Teachers' Course*.—Prerequisites, Spanish 1 and 2, and at least one advanced course. Phonetics, review of the elements of grammar, examination of texts, practice in teaching. Each half-year, 2 hours. Given in 1917-'18 and alternate years.

NOTE.—Courses 7, 8, and 9 are conducted in Spanish

SHOP WORK.

MR. LOVE.

In the shops it is aimed to give students some knowledge of carpentry, wood-turning, pattern-making, blacksmithing, machinists' bench and vise work, and machine tool work. In connection with the shopwork a course of reading is mapped out covering the construction, care, and use of the tools and machinery with which the student is working. Practical talks and lectures are also given.

1. *Wood Working and Pattern Making*.—Students acquire a practical knowledge of the handling of tools and keeping them in order. The fundamentals of joinery and wood turning are worked out in a series of graded exercises. One-third of the time is devoted to elementary pattern making.
2. *Pattern Making*.—Prerequisite, Shop 1. Patterns for cores, valves, pulleys, sheaves, gear wheels, rack and pinions and other parts of machines are made. First half of second semester of Freshman year, 2 three-hour periods, credit 1 hour. *Required of Electrical Engineers*.
3. *Forging*.—Students acquire a practical knowledge of the handling and working of iron and mild steel; of the operations of

bending, forming, upsetting, punching, splitting, welding, tempering and tool-making. Second half of second semester of Freshman year, 2 three-hour periods, credit 1 hour. *Required of Electrical Engineers.* Second half, Sophomore year, 1 three-hour period, credit 1 hour. *Required of Civil Engineers.*

4. *Machine Work.*—The student does general bench and floor work including chipping, filing, scraping, threading and tapping, and brazing. During the latter part of the course work is done involving some of the more simple operations on the machines. Second half, Sophomore year, 1 three-hour period, credit 1 hour. *Required of Electrical Engineers.*

5. *Advanced Machine Work.*—Prerequisite, Shop 4. Operations are performed with the various machines as follows:

- (a) With the lathe: turning, boring, thread-cutting, tapering, eccentric turning, etc.
- (b) With the milling machine: surfacing, slotting, fluting, gear-cutting, spiral grooving, etc.
- (c) With the shaper: surfacing, slotting, etc.
- (d) With the drill press: drilling, reaming, etc.
- (e) With the universal grinder: grinding surfaces, cylinders, milling cutters, reamers and various other tools.

Second half, Junior year, 1 three-hour period, credit 1 hour
Required of Electrical Engineers.

FEES.

Shop 1, 4, and 5.....	\$4.00 each
Shop 2 and 3.....	2.00 “

COURSES FOR TEACHERS.

Courses will be arranged, on application, for teachers of the city at hours convenient for them, either late in the afternoon or on Saturday mornings. Such courses, if passed successfully, will be credited as college work.

Department of Music

FACULTY.

WILLIAM FREDERICK SLOCUM, D.D., LL.D. 24 College Place
President.

EDWARD DANFORTH HALE, A.M. 1424 N. Nevada Ave.
*Dean of the Department of Music and Professor of the Theory
and Literature of Music, and the Pianoforte.*

A.B. (Williams College) '80; A.M. (*ibid.*) '83; Professor at the
New England Conservatory, '85-'04; Colorado College, '05.

MRS. GEORGE MAXWELL HOWE. 1811 N. Nevada Ave.
Instructor in Violin.

Cincinnati Conservatory of Music, '01-'03; Stanton College, Natchez,
Miss., '03-'05; Sternsches Konservatorium, Berlin, '05-'06;
Woman's College, Columbia, S. C., '06-'07; Colorado College, '10.

HENRY HOWARD BROWN. 1716 Wood Ave.
Instructor in Voice Culture.

Pupil of E. W. Glover, Assistant Director Cincinnati May Festivals,
'00; J. A. Broeckhaven, '00-'01; James Sauvage, '01; Dora Top-
ping, '02-'04; Max Spicker, '03-'06; Amherst Webber (coach of
M. de Reszke, Mmes. Nordica, Eames, and others) '05;
Colorado College, '14.

LOTA BLANCHE MERRIS. 1815 N. Nevada Ave.
Instructor in Voice Culture and Public School Music.

Colorado College and School of Music, '07-'09; Oberlin Conservatory,
'12-'13; pupil of Oscar Saenger and W. J. Falk, '10; H. Howard
Brown, '10-'14; Colorado College, '14.

ADMISSION.

To preparatory courses and to all special studies students are
admitted without examination. *Pianoforte* PREPARATORY is a require-
ment for admission to *Pianoforte* (a).

COURSES OF STUDY.

1. *General Musical Culture.*—Outlines of Musical Notation, Nomen-
clature and Acoustics; Musical Structure, Formal, Harmonic,
and Contrapuntal; the Symphony, the Orchestra, and the Or-
chestral Score; the Masterpieces of Oratorio, Opera, Concerto,

and other large forms; Musical History, Biography, and Criticism. This course is designed to appeal to all classes of students; in particular, through both concrete and imaginative treatment of the subject, to those who, for various reasons, cannot acquire the musical technique, but would be glad to give music a place in their culture scheme, to qualify themselves for intelligent criticism and appreciation of the art. One year, 4 hours. Tuition, \$10.00 each half-year. Free to music students.

2. *Pianoforte*: PREPARATORY.—A course normally occupying three years, designed to qualify for admission to the Collegiate course. It may be pursued here or under accredited teachers. At the end of it the student is expected to show satisfactory knowledge of musical notation and elementary nomenclature; of all scales and arpeggios, with the ability to execute them at a moderate tempo; and of the following literature or its full equivalent, including the musicianly performance by heart of a representative program chosen from it.

Bach: *The Magdalena Bach Clavecin Book*.

Haydn: *Sonatas*, G Major, 2-4, D Major, 4-4 (moderato.)

Mozart: *The easiest Sonatas in C Major and F Major*.

Mendelssohn: *Kinderstuecke*, Op. 72, and the easiest numbers of *Songs Without Words*.

Schumann: *The Jugendalbum*.

Pianoforte: COLLEGIATE.

- (a) Structural, memory, technical, critical and interpretative study of a satisfactory group of works by the classical, romantic, and modern composers. The presentation of a typical program made up from this group, containing compositions by Bach, Haydn or Mozart, Mendelssohn or Schumann. (Typical pieces, first year, Mozart, *G major Sonata*, Mendelssohn, *Song Without Words. No. 15*). Sight-Reading. Forming and maintenance of a repertoire; study of Hale, Gow, Cutter, Goetschius, Grabill, Matthay, Breithaupt, Leschetizky, and other works on structure and technique.
- (b) A second year, continuing *Pianoforte (a)*. A program con-

taining works by Bach, Beethoven, Chopin. (Typical pieces, second year, Beethoven, *Op. 10, No. 3*; Chopin, *Nocturne in B, Op. 32*.) Répertoire and Sight-reading.

(c) A third year continuing Pianoforte (b). A program containing works by Bach, Beethoven, Schumann or Chopin or Brahms. (Typical works, third year, Haydn, *E flat Sonata 44*, Schumann, *Novelette in E*). Répertoire and Sight-reading.

(d) A fourth year, continuing Pianoforte (c) and including ensemble, chamber music and other concerted works. A program containing a concerto by Mozart, Beethoven or Raff. (Typical works, fourth year, Bach, *Italian Concerto*, Beethoven, *Op. 22*, Brahms, *Scherzo in E flat Minor*). Répertoire and Sight-reading.

3. *Composition*.—Each half-year, 2 hours.

(a) Counterpoint, melody forming; two-part counterpoint, first order. Harmony, first principles. Texts by Hale, Duncan, Goetschius, Spalding. Original melodic phrases. Ear-training.

(b) Two-part Counterpoint, second and fourth orders. Harmony, elementary four-part writing. Texts as given above, with Chadwick, Foote and Spalding. Original tunes harmonized. Ear-training.

(c) Two-part Florid Counterpoint and Syncopated Counterpoint. Harmony, four-part writing. Texts as given above. Sketches in two-part and three-part song-forms. Ear-training.

(d) Double Counterpoint, three-part Counterpoint. Harmony, modulation, Chromatic harmonics. Texts as given above with Norris, Hull and others. Song-forms with trio; Minuet. Ear-training.

(e) Counterpoint; imitation; Canon. Texts by Goetschius, Spalding. Rondo. Ear-training.

(f) Counterpoint; the Invention. Texts as given above. Sonata-Allegro. Ear-training.

(g) Counterpoint, Figured Chorale. Sonata-Rondo. Ear-training.

(h) Figured Chorale. Fugue. Ear-training.

4. *Orchestration*.—Each half-year, 1 hour.

5. *Violin*: PREPARATORY.—

Dancla Violin Method (correct position of bow and violin).

De Beriot: The First Five Positions.

Laoureux: Practical Method (exercises in shifting and in different styles of bowing).

Böhmer: Studies in intonation in all the keys.

Hofmann: Melodic Studies in Double Stops, Book I.

Best examples of pieces in the smaller forms, including easy Sonatinas.

Duets by Pleyel, Gebauer, and others.

Memory and Interpretive Study from the beginning throughout the course.

Violin: COLLEGIATE.—

(a) Hermann: Studies in all the positions.

Mazas: Etudes, Op. 36.

Blumenstengel: 24 exercises, Op. 32.

Kreutzer: Caprices (first half).

Stojanovits: Scale-technic. (Scales and arpeggi to be practiced in all the different styles of bowing).

Sevcik: School of Bowing-technic.

Sevcik: Studies in Shifting.

Representative pieces by the best composers to be played in the first five positions.

Concertinos; Sonatinas; Sonatas.

(b) Kreutzer: Caprices (second half).

Mazas: Etudes Brillantes.

Rode: 24 Caprices.

Stojanovits: Scale-technic (continued).

Concertos by De Beriot, Kreutzer, Viotti, etc.

Classic pieces by the old masters, as well as compositions of the Romantic and Modern Schools.

Ensemble playing.

(c) Fiorillo: 36 Etudes.

Campagnoli: 7 Divertimenti.

Gaviniés: 24 Etudes, "Matinées."

O. Sevcik: School of Technic.

Sonatas for Violin (with piano) by Tartini, Händel, and others.

Sonatas for Piano and Violin by Mozart.

Concert pieces; Concertos. Ensemble.

(d) Sevcik: School of Technic (continued).

Sauret: Twenty Grand Etudes, Op. 24.

Works of the Celebrated Masters of the Seventeenth and Eighteenth Centuries.

Concertos by Bach, Mozart, Mendelssohn, Saint-Saens.

Concerto for Two Violins and Piano, by Bach.

Six Sonatas for Two Violins and Piano, by Bach.

Sonatas by Beethoven, Grieg, and others. Ensemble.

Students are especially encouraged and prepared for recital and concert programs, and a recital of artistic merit must be given for graduation.

Orchestral practice and public performance in orchestra, as well as in solo work, are open to all violin students. Orchestral rehearsals are held once a week.

6. *Voice Culture.*—

(a) Vocalises: Vaccai, Lamperti, Abt. Songs, Standard English and American. English diction. Sight-singing.

(b) Vocalises: Lamperti, Marchesi. Songs, Standard English, American, German, French, Italian. German, French, Italian diction. Sight-singing.

(c) Vocalises: Marchesi, Bordogni. Exercises in the Operatic Style. Arias, Opera and Oratorio. Special training for church singing and chanting. Diction. Sight-singing.

(d) Entire scores of Operas and Oratorios, Cantatas. Classic Song-cycles. Diction. Sight-singing.

The final test for special course diploma embraces the musicianly performance, with mastery of voice, style, and interpretation, of an Italian and French aria, several English songs and German songs, a sight-reading test.

The final test for the Full Diploma: A musicianly performance, with mastery of voice, style, and interpretation of an entire

song recital consisting of Italian, French, German, and English songs and arias, and a knowledge of one complete Opera and one Oratorio.

DIPLOMAS.

Students satisfactorily completing Courses 1, 2 or 5 or 6 and 3*a*, *b*, *c*, *d*, together with a high school course or its equivalent, are entitled to receive the Diploma for Special Courses, except 3. Students specializing in Violin (Course 5) or Voice (Course 6) may substitute for Course 2 a satisfactory equivalent; but they must qualify in the requirements for admission to 2*a* (p. 109). The Full Diploma is awarded upon the completion of Courses 1, 2 or 5 or 6, 3 and 4; but students specializing in 5 or 6 must take at least 2*a*.

SPECIAL COURSES.

Pianoforte, Violin, Voice, the Orchestral Instruments, Counterpoint, Harmony, Composition, Orchestration, Public School Music. Students may enter these without examination, and pursue them for any desired period (but not less than one-half year or unexpired portion thereof). No credits are given unless some regular course be adopted later, in which satisfactory work will be permitted to count.

Through its weekly conferences conducted by the Dean, its course in General Musical Culture, its weekly recitals given by students and faculty, its Glee Clubs and Orchestra, the Department provides the free educational advantages which can be had only in a well organized school.

LESSONS.

The practice of musical technique is much too intricate and difficult to be adequately guided through weekly or semi-weekly lessons. Such lessons are largely occupied with the correction of preventable blunders—a process disheartening to both teacher and student. The scheme is neither pedagogic nor business like. The student ought to have the privilege of conference with his teacher whenever he is in difficulty, and the teacher ought to be able to see his pupil as often as, in his judgment, he needs assistance in his daily work.

This is the solution which this School of Music—with both

practice and teaching rooms in the same building—has been able to adopt, and with the happiest results.

Students have the special privilege of consulting the Dean daily upon all practical problems arising in the course of their study. It is practically a daily lesson scheme, and offers a great opportunity to the ambitious student.

NORMAL COURSE.

There is a growing demand in the secondary schools of Colorado and other states for teachers who, besides their liberal arts work, are competent to teach the pianoforte and the related musical theory. This department offers a normal course designed explicitly to qualify young men and women to do this work. The course qualifies equally for the private teaching of Music. A Teacher's Diploma is granted students who satisfactorily complete the normal course.

MAJOR IN ART AND MUSIC.

Candidates for the degree of A.B. may obtain a major in Art and Music under the following conditions. They must take a minimum of eight half-year hours in music and the same amount in Art and Archæology. In addition six hours must be taken in one of these departments or divided among them. The remaining eight hours of the major shall be determined by the Committee on Individual Courses, in consultation with the major instructor. Music 1 (4 hours), Music 2 or 5 or 6, (2 hours—when taken in conjunction with courses 1 and 3) and Music 3 (4 hours, or 8 hours if taken a second year) and Music 4 (2 hours) are allowed to count toward this major.

EQUIPMENT.

The Department occupies the Perkins Fine Arts Hall a beautiful College building of stone, erected in 1900, at a cost of \$37,000. It has at its command twelve class and practice rooms, a recital hall seating 100, and an auditorium seating 600.

The Department is affiliated with The Institute of Musical Art of the City of New York, and with The New England Conservatory of Boston, and with Mme. Augusta Cottlow, of Berlin, Germany. Its standards are accepted in these cities precisely as those of Colorado College are at Harvard, Yale, and elsewhere.

TUITION.

Pianoforte, Voice, Violin, or Ensemble with Members of the Faculty—\$35.00 each half-year. Voice or Violin, 2 lessons weekly, \$50.00 each half-year.

Composition (including Harmony and Counterpoint) or Orchestration—\$15.00 the half-year.

Orchestral Instruments—\$20.00 each half-year.

General Musical Culture (free to Music students)—\$10.00 each half-year.

Public School Music—\$25.00 each half-year.

General Information

LOCATION.

Colorado College is fortunate in its environment. Colorado Springs, the county seat of El Paso County, and the third largest municipality of the commonwealth, is remarkable for its history and character, and is admirably adapted to be the seat of a college. Founded in 1874, under the direction of men of shrewd foresight and broad views, it has maintained from the beginning high standards of morality and culture. Saloons and the attendant destructive influences are absent. Radiating railroad systems and neighboring gold fields have fostered its wealth. Many visitors are attracted hither, both pleasure seekers and health seekers, but the latter are so far outnumbered that the place has none of the depressing influences so often observed at noted health resorts. The lover of nature might seek far before finding a spot more favored. The mountains are close at hand, their serrated outlines occupying about one-third of the horizon. In the center of the range, less than a dozen miles away, stands Pikes Peak. Its summit is reached by a cog railway, by bridle paths, and by a carriage road. About its base are many cañons, and in one of these, around a celebrated group of mineral springs, is the city of Manitou. The climate of Colorado Springs has attained a world-wide reputation by reason of the dryness and rarity of the air, and the opportunity for outdoor exercise afforded by the great number of fine days (helpful in cases of malarial disease, asthma, and incipient phthisis). Students unable to work in other climates may here continue their studies, while at the same time making a permanent gain in health.

BUILDINGS.

The buildings of the College are situated on a tract of about 50 acres, in the heart of the best residence portion of the city. All except the building containing the shops are of stone. Heat and electric light are furnished to all from a central plant.

PALMER HALL, completed in the fall of 1903 at a cost of \$287,000, contains laboratories and general lecture rooms. The style of architecture is that which has been chosen for the entire system of buildings eventually to occupy the College reservation, and, like the

Library and Perkins Fine Arts Hall, it is built of the "Peachblow" sandstone. The structure is fire proof. On the first floor are laboratories for Chemistry, Physics, Mining, Metallurgy, and a large demonstration room. On the second floor are general lecture rooms, and other laboratories for Chemistry. Near the head of the west stairway is a large bronze tablet, dedicated to the late General William J. Palmer, by the survivors of the 15th Pennsylvania Cavalry. The third floor contains the laboratories for Biology, Geology, and Mineralogy, general lecture rooms, and a large, well-lighted Museum for the natural science collections of the College. The building was equipped at a cost of \$50,000.

THE PERKINS FINE ARTS HALL, named for one of the principal donors, the late Willard B. Perkins, of Colorado Springs, was completed in 1900. It is a two-story stone building, and cost \$37,000. The lower story is a large auditorium, seating 600, in which the chapel exercises are held and concerts and lectures are given. This room contains a valuable pipe organ, given by Miss Elizabeth Cheney, of Boston, Mass., in memory of her brother, Charles P. Cheney. The upper story contains the lecture and practice rooms of the Department of Music, and the College Art Gallery. For a description of the Art Collection, see page 120.

THE LIBRARY, given in 1894 by the late N. P. Coburn, of Newton, Mass., and costing \$50,000, is of great architectural beauty and admirably adapted to its purpose. A full size cast of the "Winged Victory" of Samothrace, stands at one end of the main hall. In recesses are casts of the Hermes of Praxiteles and of Mercie's David. Mr. A. L. Dickerman's collection of rare Indian curiosities adds to the interest of the room.

THE ASTRONOMICAL OBSERVATORY is the gift of Henry R. Wolcott, of Denver, and was completed in 1894. Besides the dome room it contains a lecture room, a transit room, and a photographic dark room.

THE SHOPS. Two buildings contain the dynamo room and the shops for carpentry, forging, and machine work.

THE PRESIDENT'S RESIDENCE, at the northern boundary of the campus, was purchased in 1888, and remodeled in 1903.

CUTLER HALL (Engineering Building), the oldest building on the campus, was first occupied in 1880. It contains recitation rooms, and electrical and hydraulic laboratories.

COSSITT MEMORIAL. Through the generous gift of \$110,000 by Mrs. A. D. Juilliard of New York, a Men's Building has been erected. It was dedicated in June, 1914. It contains a finely equipped gymnasium, a stadium, reading rooms, dining hall, and a common room, and is the center of the athletic and social life of the men of the college. The building was given by Mrs. Juilliard in memory of her father, and is called The Frederick H. Cossitt Memorial Hall. The dining hall is under the management of Miss Frances M. Rogers.

THE ADMINISTRATION BUILDING, formerly a residence, was presented to Colorado College in the summer of 1914. It adjoins the College campus, and provides convenient quarters for all the offices of administration. The Faculty Club, also, is established there.

THE UTILITY BUILDING, erected in the summer of 1914, overlooking Washburn Field, contains the Electrical Engineering Laboratory.

COLLEGE RESIDENCES.

HAGERMAN HALL, built in 1889, is used as a home for young men. Besides the students' rooms, it contains a large social room provided with piano, games, and magazines. On the roof and in the office of the Weather Bureau are the Meteorological Station instruments.

MONTGOMERY HALL was erected and furnished in 1891 by the Woman's Educational Society, and presented to the College. It provides a comfortable home for young women, and contains the rest room under the charge of the Young Women's Christian Association, for the use of all young women of the College.

TICKNOR HALL, the gift of Miss Elizabeth Cheney, was opened as a home for young women in 1898. Besides students' rooms, it contains an infirmary capable of complete isolation. The infirmary is open to all young women living on the campus, and is in charge of a trained nurse, whose services, whether in the infirmary or in the students' rooms, are paid for by an annual fee, due in September, of \$5.00 from each young woman.

MCGREGOR HALL, a commodious and convenient building, was opened in 1903 as a third residence for young women. It contains a fully equipped gymnasium.

BEMIS HALL, the center of the social life of the whole college, was opened in September, 1908. In it, besides rooms for young women, are the offices of the Dean of Women, a spacious Common Room, a large dining hall with an open wood roof after the manner of the English halls, and the Cogswell theater for college dramatics.

LIBRARY.

MANLY DAYTON ORMES, LIBRARIAN.

The Library building has been elsewhere described (p. 117). In it are, altogether, about 70,000 volumes and 40,000 pamphlets. Twenty-five hundred volumes are in the Engineering Library. The leading literary and scientific journals are received, as are also the United States Government publications and those of the State of Colorado. Of United States documents the library now has about 10,000 volumes, including the records of Congress complete from 1847, and many valuable records for the period 1774-1847. These documents are arranged on the plan adopted in the library of the Superintendent of the United States Documents at Washington.

The engineering library is located in a large room 60 feet by 30 feet in the basement of the N. P. Coburn Library building. It contains 2,500 volumes on technology. This library has a complete set of the Engineering Record (formerly called the Sanitary Engineer), and Van Nostrand's Engineering Magazine; one hundred and seven volumes of the Minutes of the Institution of Civil Engineers of Great Britain; the recent volumes of the Engineering Magazine, Cassier's Magazine, Engineering News, Engineering and Mining Journal, Technical World, Electrical World, Mineral Industry, Electrical Engineer, Electrical World and Engineer, Electrician (London), Electric Journal, Technology Quarterly, Municipal Engineering, American Machinist, Journal of the Franklin Institute; the current numbers of Mining Science, Metallurgical and Chemical Engineering, Engineering Index, Chemical News, and Journal of the American Chemical Society; the recent transactions of the American Institute of Electrical Engineers, and the American Society of Civil

Engineers. A complete set of the Scientific American and Scientific American Supplement, of the American Journal of Science, and the current numbers of other leading periodicals on pure science and mathematics, are kept in the main room of the Coburn Library. The engineering library has also the reports of the State Engineer, the United States Geological Survey, the United States Coast Survey, the Chief of Engineers and the Chief of Ordnance, U. S. Army, as well as the United States publications on Irrigation.

THE COBURN LIBRARY BOOK CLUB, organized in 1897, provides its members with the best new books, which are given to the Library after two years. The fee is \$5 a year or \$3 for six months. Members enjoy the full privilege of the Library. The Club has purchased 3,700 books, of which 3,400 have already been given to the Library.

The Wednesday Art Club and the local chapter of The Daughters of the American Revolution have started collections of books on their special topics.

A reading room is provided with the current literary and scientific magazines, as well as a number of leading newspapers

The Engineering Department of the Library occupies a room in the basement prepared for the use of the Colorado Polytechnic Society. In addition to 1,500 volumes belonging to the College, it contains several valuable private libraries loaned by members of the society, to which students of the Engineering School have access.

In Room 44 of Palmer Hall are about 300 volumes, given to the Classical Department by Mrs. M. C. Gile, to form the beginning of a department library for Greek and Latin.

ART COLLECTIONS.

The College Art Gallery on the upper floor of Perkins Fine Arts Hall contains several valuable paintings by famous artists. Among these are a portrait of General William J. Palmer, by Herkomer, a portrait of President W. F. Slocum, by Alexander, and a portrait of the late Professor Ahlers, by Benson. The portrait of President Slocum was presented at Commencement, 1913, by friends of the College, in celebration of his quarter-centennial of service.

A bronze statue of the Flying Mercury, presented by James F. Burns, and marble busts of Antinous and Dante are placed in this room.

In the Art Room in Palmer Hall where the classes in Art and Archaeology meet there is hung a fine collection of large carbon photographs. These reproductions of famous works of art in the European Galleries are from the firm of Braun, Clément in Paris. The cabinets in the Art Room contain over 2,000 mounted photographs illustrating the History of Architecture, Sculpture and Painting throughout the ages. In addition the Classical Department owns several hundred fine lantern slides used as illustrative material for courses in Greek and Roman History, Classical Mythology and Archaeology.

LABORATORIES AND APPARATUS.

BIOLOGY.

THE BIOLOGICAL LABORATORIES are eight rooms on the second floor of Palmer Hall. In these, each student is assigned a desk, and in courses requiring microscopic observation is furnished with a microscope for which he is held responsible. There is an abundant supply of all kinds of glassware necessary for the various courses, also micrometer eye-pieces, cameras, dissecting microscopes, paraffine baths, microtomes, life-boxes and charts. For the courses in Zoology, Comparative Anatomy, etc., a number of mounted and disarticulated skeletons and anatomical models are provided. A large amount of the museum material is also available for illustration in these courses. The physiological laboratory is supplied with such Harvard apparatus as the capillary electrometer, rheochord, inductorium, kymograph, moist chamber, heavy muscle-lever, ergograph, pneumograph, work adder, manometer, circulation scheme, respiration scheme, and many more kinds of pieces. In addition, there are on hand such pieces as Ludwig's arm support and sphymograph, Marcy's cardiograph, stethoscope, Erlanger's and Cook's sphymomanometers for blood pressure determinations, Thoma Zeiss Hæmacytometer for the enumeration of the corpuscles of the blood, the Fleischl's hæmometer and Gower-Haldane hæmoglobinometer for the estimation of the hæmoglobin of the blood, Lombard's modification of Mosso's ergograph, and spirometer.

The equipment for Bacteriology includes incubators, Arnold steam sterilizers, autoclav, hot-air sterilizers, Becker balance, Trøemner media scale, centrifuge, animal holders, culture jars, water sampling apparatus, inoculating water baths, double boilers, hot-water funnels, counting apparatus, and other appliances essential to the work. For botanical courses clinostats, auxinometers, and a variety of smaller apparatus are provided.

THE HERBARIUM occupies a room in the Biological Department. The nucleus consists of a Colorado herbarium purchased from Marcus E. Jones, and later enlarged. The larger part of the present collection is the Edward Tatnall herbarium, presented to the College by Miss M. H. Tatnall, of Elmira, N. Y. This collection, of about 22,000 species and varieties, includes representatives of all the great plant groups. Of these there are some 900 Algæ, 1,700 Lichens, 2,000 Bryophytes, 1,050 Pteridophytes, and 16,350 Angiosperms. These specimens, carefully and fully labeled, were collected in 23 different states, Canada, Sweden and England, by 65 collectors. A catalogue makes the herbarium especially valuable.

CHEMISTRY.

THE CHEMICAL LABORATORIES include: (1) The General Laboratory; (2) the Qualitative Laboratory; (3) the Quantitative Laboratory; (4) the Organic Laboratory; (5) the Assay Laboratory. The best features of modern arrangement and construction have been embodied in these. The lighting and ventilation have received special care. The hoods are generously distributed in every working room, and each hood is connected with a large separate flue. The ceilings are high, the light excellent, the desk and working space for each student is abundant, and the drainage through iron covered floor drains is of the most approved modern type. The desks are fitted with very full sets of reagents and all facilities for the prosecution of the work in hand. Adjacent to the laboratories are the preparation rooms, which provide for the ready distribution of supplies. Smaller rooms, which are used for particular branches of chemical study, are supplied with appropriate apparatus—fine balances, spectroscope, the best Schmidt and Hænsch polariscope, Atwater bomb calorimeter, photographic apparatus, combustion furnaces, and a large assortment of metal and glass apparatus for general and analytical processes of investigation.

THE ASSAY LABORATORY is equipped with muffle furnaces for solid fuel, and crucible and muffle furnaces for gasoline; a large furnace of reverberatory type for handling a large number of fusions at one time; ore bins; fuel bins; twelve new pulp balances, and several button balances, including two of the highest grade made by Ainsworth of Denver. It is also supplied with a large number of checked ore samples of various grades and kinds, donated by the American Smelting and Refining Company, the Ohio and Colorado Smelting and Refining Company, the United States Reduction and Refining Company, the Portland Mining and Milling Company, the Elkton Mining Company, Mr. E. C. Woodward and others.

GEOLOGY.

The general laboratory is provided with five large models and relief maps for the illustration of river work, glaciation, and vulcanism, together with a complete set of the geological folios of the United States Geological Survey, and more than 1,000 topographic maps. Suites of rock specimens are provided, covering all the main types of the igneous, sedimentary, and metamorphic rocks, as well as representative specimens from important mining districts in Colorado. A carefully prepared collection of thin sections of rocks is available for microscopic study, covering the varieties of the igneous rocks and illustrating their mineralogy. Seibert petrographic microscopes are provided.

In the mineralogical laboratory a general collection, numbering several specimens for each of the 175 minerals taught in the introductory course, is set out in open cases for the illustration of the crystal forms and the variations in the massive kinds. Each student is given a working collection covering the same minerals. Crystallography is taught by means of 150 models of crystals in wood and by the aid of a small collection of transparent models. The material for the practice determinations required of every student embraces 5,000 specimens.

For the work in paleontology the collections of fossils in the College museum are employed, together with the departmental collection. They are representative of a large number of the genera in the several classes of invertebrates, and also of many of the extinct vertebrates.

The departmental material in the library comprises complete sets of the publications of the United States Geological Survey, Annual Reports, Monographs, Bulletins, and Professional Papers, with about 300 of the annual volumes issued by the state surveys, and general works of reference.

PHYSICS.

The general equipment of the laboratory is represented by the experiments of Millikan's *"Mechanics, Molecular Physics, and Heat,"* and Millikan and Mills's *"Electricity, Sound, and Light."* There are also a large standard clock with a Shedd magnetic contact maker, a standard H. J. Green barometer presented by General Palmer, a Gærtner cathetometer, a recording chronograph, a standard meter and balances, and calipers and thermometers for precision work.

For advanced work in Electricity the equipment of the Electrical Engineering Department is available.

A photometer room with a Lummer-Brodhun photometer and a three-meter track is part of the equipment of the laboratory for work in light. There is also a large Michelson interferometer, several spectrometers, and an optical bench.

The lecture room of the Physics department is furnished with the most modern Bausch and Lomb Convertible Balopticon for the projection of transparent slides and for opaque objects such as photographs and drawings. The apparatus for experimental demonstration purposes is especially complete. Much of it has been imported from Max Kohl. There is a projection apparatus for polarizing light phenomena; a wireless telegraph set, a Tesla coil presented by Dr. Gerald B. Webb of Colorado Springs; a collection of Crookes and Geissler tubes; a large Toepler-Holtz machine presented by the Alumni Association of Colorado College; several Wimhurst machines and an induction coil; and special apparatus for demonstration of phenomena in heat, sound, and mechanics.

PSYCHOLOGY.

The equipment includes the following: Azoux dissectible model of human brain; Deyrolle *"Deux Demi-Tete,"* showing distribution of cranial nerves; Deyrolle model of the spinal cord in

cross section, much enlarged; Deyrolle model of the cord *in situ*, showing connections with the sympathetic system; lantern slides of gross and microscopic structure of nervous system. Models of the sense-organs are available from the Department of Biology, and cranial casts and crania of various races and animals from the Museum.

There is also one set of Helmholtz resonators, set of low forks, set of ten mounted tuning forks, four extra forks, Edelmann whistle, Quincke tubes.

A direct-current electric motor rotator with rheostat and speed recorder attached, spring suspension electric rotator, rheostat, Kirschmann photometer, Pillsbury speed reducer, kymograph with magnetic speed control and long and short drums, 100-vibration tuning fork, triple electric recording pen, Jacquet graphic chronometer, Marey tambours, bell metronome, Vernier chronoscope, two pendulum chronoscopes, split-second stop-watch, plethysmograph, Smedley dynamometer, Titchener automatograph, olfactometer, temperature and pressure points, after-image apparatus, colored and gray discs and papers, stroboscope, stereoscopes, Stratton's pseudoscope and telestereoscope, Nagel color-blindness test, visual acuity tests, spectrum chart, complication apparatus, Jastrow exposure apparatus, tachistoscope, two campimeters, etc.

In addition to the regular equipment of the laboratory, the department of psychology has recently added a shop equipped with a South Bend lathe, wood-working, metal-working, jewelers', and watch-making tools. The shop is used for the repairing of apparatus, the building of new apparatus, and for making special pieces needed in research work.

SHOPS.

In addition to the training of hand and eye necessary for his future studies in drafting and design, every engineering student should acquire practical knowledge of carpentry, wood turning, pattern-making, blacksmithing, tool-making, machinists' bench and vise work, and the handling of machine tools. Such practical knowledge is essential to the engineer in forming his judgments on the details and the possible execution of his designs in the shop. To afford training along these lines, as well as to give the student a foundation for further work along the lines of structural engi-

neering, three shops containing machinery of the latest and most approved patterns have been established.

1. *Wood Shop*.—The Wood Shop occupies a room 30x60 feet. It has electric drives. It is equipped with heavy maple-top cabinet benches, each having a tool cabinet furnished with the best make of tools, comprising Bailey planes, Buck Brothers' chisels, Disston saws, etc. Six wood-turning lathes of 14-inch swing have been added to the equipment, making in all twelve lathes. The laboratory has also a 32-inch band saw, a table saw, 24-inch cylinder planer, mitre saw, hand saws, a universal wood trimmer, clamps, hand screws and tool sharpening machinery.
2. *Forge Shop*.—This occupies a room 30x30 feet with a stock room 10x15 feet adjoining. A twenty-horsepower General Electric variable speed motor drives Sturtevant blast and suction fans connected with Buffalo down draft forges. The equipment consists of swage blocks, benches, vises, lockers, emery grinder, hand forge, etc.
3. *Machine Shop*.—The Machine Shop occupies a top-lighted room 25x100 feet. A steam engine drives the equipment and serves as an illustrative piece of apparatus. The equipment consists of machinists' benches; bulldog vises, drawers containing individual sets of tools; two 14-inch Bradford engine lathes; an E. E. Reid screw-cutting lathe; a Hendey-Norton 14-inch precise tool room lathe; a shaper; a Cincinnati universal milling machine with various attachments including a dividing head; a Gray planer, 24"x 24"x 6 feet, with double heads on cross rail, and micrometer screw adjustment; a Greenfield universal tool and cutter grinder, adapted for grinding to size, straight and taper arbors, conical or cylindrical work, internal sizing, reamers of various kinds, milling cutters, taps and dies, countersinks and counterbores; an electric centre grinder; a large and small drillpress; an emery grinder; a machine hacksaw; grinding machinery; a gas brazing furnace; a gas annealing furnace; a pneumatic chipper, calker and riveting tool; several kinds of micrometers; face plate for finishing surfaces; large steel machinists' rules,

etc. As need arises other equipment will be added to this and other mechanical laboratories.

CIVIL ENGINEERING LABORATORIES.

1. *The Testing Laboratory.*—A room in the Mechanical Laboratories building has been assigned for the testing of materials of construction. Here is mounted a 100,000-pound Riehle testing machine for making tension, compression, shearing and transverse tests, and an abrasion cylinder for testing paving material; both machines are driven by a five-horse-power Crocker-Wheeler motor. In addition to other accessory apparatus a Henning extensometer is available for tension tests, and an Olsen compression micrometer for compression tests, each instrument reading to one-ten-thousandth of an inch. Each student is required to make a series of tests upon the resisting properties of wood, brick, concrete, stone, wrought iron, cast iron, and steel. Commercial tests, made from time to time for local manufacturers and others, bring the students into close touch with practical work of this sort.
2. *The Cement Testing Laboratory* in the basement of Cutler Hall is equipped with a Fairbanks testing machine, Vicat indenting apparatus, sand and cement sieves, briquette moulds, cube moulds, Gilmore's needles, running-water, storage tanks, and other apparatus requisite for investigations in the nature and physical properties of cement and cement mortars. All students are required to make the test briquettes of cement and cement mortar, as well as to determine the weight, fineness, and other physical properties of such cement, sand, and mortar, as may be assigned to them for examination.
3. *The Hydraulic Laboratory* is in the basement of Cutler Hall. The available floor space is about 1,200 square feet, and there is an ample supply of water at a pressure of 65 pounds per square inch. The equipment includes a 1,500 gallon tank with weir notch; rectangular, trapezoidal and triangular weirs of various sizes; a complete installment for the determination of hydraulic constants of flow through orifices and short tubes; a 3-inch Venturi meter and four displacement meters

of different types; a hydraulic ram installation; pressure gauges and differential gauges, thermometers, etc.; as well as portable weighing tanks and scales. To further illustrate the principles of hydraulics and power application there is a 9-inch Leffel turbine in a cast iron case, and a small centrifugal pump operated by a 12-inch Doble impulse water motor. The motor is designed especially for laboratory purposes, being furnished with an adjustable nozzle, and glass casing instead of metal, in order that the action of the jet may be studied.

4. *The Blue Print Room* is on the third floor of Cutler Hall. It is equipped with daylight printing frames for making blue prints or blue line prints up to 30x42 inches in size, and suitable facilities for washing and drying the prints. Students are required to be able to make white or blue line prints of such tracings as they have occasion to make in the various courses. In this room is also located a dark room for the photographic work of the department such as copying, lantern slide work, etc.

SURVEYING.

The Department possesses a complete working equipment of engineers' field instruments, including four plain transits, two railroad transits, a K. & E. complete transit, two Berger mining transits with interchangeable tops and side telescopes, a Saegmuller transit with solar attachment, a Young and Sons mining transit with top telescope and Smith solar, a Buff and Buff triangulation transit of the U. S. Coast and Geodetic Survey pattern, a surveyor's compass, a Burt solar compass, four wye levels, two dumpy levels, a plane table with telescopic alidade, a traverse table, a U. S. Navy pattern sextant, as well as smaller instruments and accessories. Students learn the use and adjustment of the field instruments at the Summer School of Surveying, held for four weeks during June and July at Manitou Park.

Summer School of Surveying.—Field work in surveying is done under exactly the same conditions that prevail in actual practice. This work is carried on as a continuous exercise of four

weeks' duration at Manitou Park, immediately after the close of the regular College exercises, at the end of the Freshman and Junior years. The work is done under the direction of the head of the Civil Engineering Department and a corps of experienced assistants. The class is divided into squads furnished with all necessary equipment. Each squad is required to execute a stated number of surveys and to make complete notes and maps as would be required in practice. Manitou Park, the property of Colorado College, contains six thousand acres and is situated about twenty-seven miles northwest of Colorado Springs. Within the bounds of this Park are found every kind of ground over which surveys are carried. Adjacent to the Park are many mining locations and several patented claims.

The College furnishes living accommodations for the students. Students provide their own bedding.

ILLUSTRATIVE APPARATUS AND MATERIAL.

Lantern Slides, Photographs, and Trade Catalogues.—The Department has a representative collection of lantern slides on steam engineering, machine design, metallurgy, and electrical engineering; and blue prints, photographs and descriptive data of various engineering structures. The department drafting rooms contain complete reference files of catalogues and blue prints pertaining to their special engineering branches, which are freely used in connection with those courses requiring design work.

Geometrical Models and Balopticon.—For illustrating subjects in descriptive geometry and graphics there are in the drafting room a number of models prepared by students, including half a dozen thread models of ruled surfaces, bridge trusses, and machines. In the mathematical class-room there are a number of models of wood and plaster of Paris. The Department also has a Bausch and Lomb Balopticon of the latest pattern, by means of which photographs, cuts from magazines and newspapers, and any small drawing, up to 5x7 inches in size may be projected directly upon the screen without the necessity of having lantern slides made.

ELECTRICAL ENGINEERING LABORATORIES.

1. *The College Power Plant*, which is available for the purposes of the Department of Electrical Engineering, consists of four 115-volt G. E. compound generators direct connected to G. E. marine engines. These generators are rated at 15 kw., 15 kw., 30 kw., and 50 kw., respectively. They are connected to a switchboard with an ammeter and a voltmeter for each machine, and a ground detector for the system. There are also feeder panels for distribution. The two 15 kw. units are used for student experiments on the parallel operation of compound generators.
2. *The Electrical Engineering Laboratory* is located in its new quarters in the Utility Building overlooking the athletic field. The main laboratory is twenty-two feet wide and fifty-eight feet long. This new laboratory with its concrete floor, high ceiling and good afternoon light adds greatly to the department's efficiency. It contains a G. E. 10-h.p., variable speed interpole motor; a Holtzer Cabot 1-h.p. series motor; a Westinghouse 20-h.p. compound motor with machine tool controller; a G. E. 25-h.p. motor with armature speed controller; and a Westinghouse 12½ kw. compound wound interpole generator or motor. Two 1.75 kw. compound wound Crocker-Wheeler generators are used for parallel running, "pumping back," or similar tests. All of the above are for 110 volts.

The alternating current equipment consists of a Westinghouse 10 kw., one-, three-, and six-phase, 110 volt D. C. rotary converter; a 15-h.p. Westinghouse three-phase, 220-volt synchronous motor; a 15-h.p. Westinghouse three-phase, 220 volt induction motor, supplied both with a squirrel cage and wound rotors; two 15 kw. G. E. special three-phase alternators; one La Roche special alternator (with armature composed of two parts, so that a mechanical displacement of phase from 0° to 90° may be obtained), rated at 25 kw., 2,000 volts, and 125 cycles, but at present run two-phase, 550 volts and 60 cycles; a 5-h.p., three-phase induction motor; a 5-h.p. Westinghouse, single-phase series motor; two G. E. type H transformers; two Maloney transformers; a 12½ kw. three- and six-phase Westinghouse transformer; three

Westinghouse distributing transformers; three single-phase reactance coils; and a 50 kw., 60-cycle testing transformer giving voltages up to 70,000 volts. There is also a three-phase oscillograph giving simultaneous representation of e.m.f. and current wave forms.

3. *The Electrical Testing Laboratory* of the Department is located in the south wing of the Engineering Building, Cutler Hall. It contains a complete and high-grade equipment for the measurement of resistance, inductances, and capacities; the measurement of magnetic constants; and the calibration of both direct and alternating current measuring instruments. There are, for example, fourteen galvanometers representing various types, both ballistic and non-ballistic, in Thomson and D'Arsonval forms. A Siemens and Halske astatic, and a Hartman and Braun ballistic D'Arsonval should be mentioned especially. For the measurement of resistances, in addition to the regulation type of Wheatstone bridges, postoffice boxes, and test sets, there is a Kelvin low resistance bridge with standardized coils of 0.001 to 0.01 ohm; a Carey-Foster bridge; four O. Wolff high resistance boxes; a Leeds 0.1 ohm standard; two Wolff standards for 0.1 and 0.01 ohm; two Leeds N. B. S. standards for 1 and 10 ohms. For the comparison of potentials there are three standard cells; a potentiometer with a volt box for extending its range; a quadrant electrometer; a Siemens and Halske electrometer, and three Siemens and Halske torsional voltmeters with volt boxes. For the measurement of power there are several electro-dynamometers capable of use either as ammeters or as wattmeters. For the direct measurement of current, potential, or power, there are eighteen voltmeters, twenty-two ammeters, and eleven wattmeters of various ranges, some for d.c. and some for a.c. measurements. Standardized current and potential transformers greatly multiply the range and use of the a.c. meters. These instruments are portable precision instruments, and with the station instruments of the department are first calibrated by the student in the testing laboratory and then used by him in measurements on the machines in the electrical engineering laboratory. For measurements in inductance

and capacity, besides several standards for each, there is a Siemens and Halske solenoid for ballistic galvanometer calibration, a variable standard of self and mutual induction, and a Siemens and Halske bridge for measuring small inducances. For measurements in magnetism there may be mentioned especially a Hartmann and Braun permeameter set, a Hopkinson yoke permeameter, and a Du Bois magnetic balance. A three-meter photometer track with a Lummer-Brodhun photometer permits of measurements of the horizontal and mean spherical candle power of lamps. Among the remaining instruments should be mentioned a sechometer, an ohm and faradmeter, a Kohlrausch bridge, a Cardew hot wire voltmeter, and a tachometer with voltmeter.

The Department owns several switchboard instruments, some recording, representing the following types: Diamond, Bristol, Federal, Sangamo, Duncan, Shallenberger, Edison, G. E., Westinghouse, and Thompson-Houston. The Department also possesses a large collection of machines and instruments which are commercially obsolete, but of great historical or scientific interest. There are also samples of Thomas, Locke, and G. E. porcelain insulators; an assortment of Hemengray glass goods; parts of Weston instruments showing their construction; an exhibit of G. E. incandescent lamps showing the steps in their manufacture; and a collection of fuses from the Johns-Manville and the D. and W. Fuse Co.

THE MANITOU FOREST—A FIELD LABORATORY IN FORESTRY.

The Manitou Forest is a tract of 6,000 acres, situated twenty-seven miles from Colorado Springs and about eighteen miles north of Pikes Peak. It is reached by the Colorado Midland Railroad to Woodland Park, twenty miles, and then by stage, seven miles. It is within the boundaries of the Pike National Forest. Camp Colorado, a group of cottages used in conjunction with the School of Engineering, makes a most convenient and homelike center for the field courses.

The Forest is under the direct supervision of the School of Forestry. It affords unusual opportunities for study and practical experience in the field. This tract has a good stand of Western Yellow Pine and Douglas Fir. Much of the timber is mature, and

logging and milling operations are now being carried on. An abundant young growth is replacing the timber that is being removed. The rich land along a stream which waters the valley offers an excellent opportunity for the establishment of nurseries and the study of tree planting. The forest is being brought into the best possible producing condition. The students are given opportunity, under the direction of the Forestry Department, to take part in all the phases of the treatment and management of the forest.

The College has a good working equipment of axes, saws, calipers, surveying instruments, meteorological instruments, and such other apparatus as is needed in the study and care of the forest.

OBSERVATORY AND METEOROLOGICAL STATION.

THE OBSERVATORY has a telescope of four-inch aperture, presented by Mr. Henry R. Wolcott, of Denver, a transit and a sidereal clock, both given by the late Charles S. Blackman, of Montreal, Canada. The College Meteorological Station, now in Hagerman Hall, is well equipped with recording instruments. The largest of these instruments, the quadruple register, given by the late General William J. Palmer, records minute by minute the direction and velocity of the wind and the sunshine and rainfall. In shelters are instruments for measuring and recording temperature and humidity. A Draper barograph, given by the late Dr. S. E. Solly, affords a continuous record of the atmospheric pressure. In Coburn Library are bound records of the beginning of the meteorological library, valuable accessions to which have been received from the late General Palmer.

Special information has been furnished on request to the city engineer and to several railway companies, while tabulated statements of the current weather are supplied regularly to the local newspapers, to the city health officer, and through the Chamber of Commerce, to various applicants at home and abroad who desire them for publication.

MUSEUM.

EDWARD ROYAL WARREN, DIRECTOR.

The Museum is on the second floor of Palmer Hall. Glass showcases extend on all sides of the room. The central part is taken up with the larger specimens. The megatherium stands in

the west half, and the mounted skeleton of a whale occupies the eastern portion. Grouped around them are the large natural history specimens, casts of noted fossils, and at intervals are show-cases for small specimens.

The foundation of the Museum was laid by the gift of Winfield S. Stratton.

PALEOBOTANY is represented by two cases of Carboniferous, Cretaceous, and Oligocene plant remains classified by Mr. Baker.

PALEONTOLOGY.—Several cases are given up to the display of the invertebrate fossils, which are zoologically arranged. The collection contains typical and rare forms of foraminifera, corals, crinoids, brachiopods, mollusca, and arthropoda. The mollusca and echinoderms collected by Prof. Cragin are for the most part from the lower Cretaceous. The mollusca from the Atlantic slope, presented by Prof. Wm. B. Clark of Johns Hopkins University, are chiefly Tertiary. Besides an excellent geological record, the collection contains a series of casts of noted specimens.

The foundation for the collection in vertebrate paleontology was laid by the purchase for the college of the large paleontological cabinet of Prof. Cragin by General Wm. J. Palmer and the Colorado Springs Company. This collection consists of some 8,000 specimens from Colorado, Kansas, Indian Territory, Texas, and other states, and includes remains of Pliocene horses, llamas, Miocene rhinoceroses and mastodons, Cretaceous saurians, and tertiary fishes. It is of importance not only as supplying a large part of the geological record not otherwise represented in the Museum, but also as containing the types of many new species and some new genera of fossils. Among these type fossils the most important is the large plesiosaurian reptile *Trinacromerum*, the type of a new genus and species described from the Cretaceous of Kansas in 1888. Another valuable item of the collection is the extensive series of casts of fossil vertebrates given by W. S. Stratton. These casts include such forms as the *Icthyosaurus*, *Archæopteryx*, *Glyptodon*, *Dinotherium* head, *Elephas* heads, *Mastodon* head and tusks, *Megatherium* and restorations of the *Colossochelys*, *Plesiosaurus*, *Mammoth*, and other forms.

ZOOLOGY.—The collections of Invertebrate Zoology occupy a series of table cases along the south side of the room. They com-

prise representatives of the different groups, such as the Protozoa, Cœlenterata, Mollusca, etc. These have been recently rearranged and provided with descriptive labels which it is hoped will be found useful to students.

A representative series of the Myxomycetes or Mycetoza of Colorado, collected by Dr. Sturgis and Mr. Ellsworth Bethel, have recently been added to these collections, and Professor Schneider has presented a large series of the Butterflies and Moths of Colorado mounted in Denton tablets.

Vertebrates are well represented by the large natural history collection received through the generosity of W. S. Stratton. It contains 29 species of fishes, among which are the blue-shark, a few ganoids, and several curious tropical forms. Among the 23 species of reptiles, the most important are the Indian crocodile, python, iguana and the gila monster. The collection includes 442 species of birds, including such interesting forms as the ostrich, cassowary, Australian crane, apteryx, and Argus pheasant. The ornithology of all parts of the world is represented by the more striking forms. The mammals number 170 and include a group of mounted orangutans, a group of all known genera of marsupials, the Indian elephant, rhinoceros, nyghau, polar bear, and a complete mounted skeleton of a large whale.

Through the generosity of General Wm. J. Palmer, the Museum has acquired the unrivalled collection of Colorado and other birds accumulated during the past thirty-five years by Mr. C. E. Aiken of this city. About one hundred and fifty of these have thus far been mounted for exhibition and are displayed in one of the wall cases on the south side of the Museum. The rest of the collection is in the form of skins, and is arranged in two large cabinets in the Director's room; it is available for study by any one who wishes to make use of it. All the birds are fully labeled and a complete card catalogue has been prepared.

A small collection of bird's eggs, mainly the gift of Ivan C. Hall, of the class of 1908, has been placed on exhibition.

A collection of Colorado Mammals is being made. This now contains over fifty mounted specimens of local species, and additions are being made. These are exhibited in the case next to the Aiken birds.

A study collection of mammal skins has also been added. These are in a cabinet in the Director's room.

A collection of Colorado fishes, amphibians, and reptiles, has been begun. They are in a show case in the large hall.

MINERALOGY.—The collection in mineralogy occupies the north side of the room and includes 1,450 specimens of minerals, common, commercial and rare.

ETHNOLOGY is represented by a series of casts of skulls and brains of different peoples. The series also contains 125 masks of South Sea Islanders and 25 framed pictures of different races.

ANTHROPOLOGY.—The anthropological department contains a large amount of pottery from Missouri, New Mexico, and Peru; the Taos Pueblo, Pueblo Bonito, and DeChelly ruins are reproduced in miniature. The Bixby-Lang and Deane collections from the Cliff-dwellings were received through General Palmer. The Bixby-Lang collection was made in Southeastern Utah and Northern Arizona during the years 1897-'98. The collection includes almost 500 specimens of pottery, implements, skulls, and mummies. The specimens of pottery are exceptionally well preserved. The Deane collection was made in Western New Mexico and includes over 800 specimens of pottery, implements, skulls, and idols.

There is also a collection of Egyptian antiquities received from the Egyptian Exploration Society, of which Colorado College is a member:

RELIGIOUS LIFE.

The College is distinctly Christian, and recognizes character as the highest attainment. It is unsectarian in its management. Entering students are asked what their denominational affiliations are, and what churches in the city they desire to attend; lists are sent to the pastors of these churches, who seek out the students and bring about them the influence of church homes. Morning prayer is held in the chapel daily, attendance being required of all students. Every Friday the President discusses questions bearing directly on student life.

In September, 1911, the College Vesper Service was established. It is held every Sunday afternoon during term time at five o'clock. A vested choir of twenty-four voices leads in the music under the

direction of Mrs. J. S. Tucker. The attendance of students is not required, but there is a large voluntary attendance.

The list of preachers for 1915-'16 is as follows:

The Right Reverend Benjamin Brewster, D.D.

Dean Charles Reynolds Brown, D.D.

Dean Florian Cajori, LL.D.

Professor Thomas Nixon Carver, LL.D.

President Ozora Stearns Davis, D.D.

The Reverend David Fales, Jr.

President Livingston Farrand, M. D., LL.D.

President William H. P. Faunce, D.D., LL.D.

President Albert Parker Fitch, D.D.

President William Trufant Foster, LL.D.

The Reverend James H. Franklin.

The Reverend Samuel Garvin.

The Very Reverend H. Martyn Hart, D.D.

The Right Reverend Francis J. McConnell, D.D., LL.D.

The Reverend Frederick W. Oakes.

The Reverend Frank M. Sheldon.

President William F. Slocum, D.D., LL.D.

The Reverend Merle N. Smith, D.D.

The Right Reverend Homer C. Stuntz, D.D.

The Reverend Arthur N. Taft.

The Reverend Allan A. Tanner.

The Right Reverend Nathaniel S. Thomas, D.D.

The Reverend Frank H. Touret.

At the beginning of the present college year, Colorado College took what it considers a long step forward in the development of its religious life, by calling the Rev. David Fales, Jr., to be the head of the Department of Bible and Religion. This department is to be the coordinating factor among the religious forces of the College; and will also serve as the medium for correlating the life of the College with the life of the churches of the city.

This department now offers, including the courses which Dean Parsons continues to give, a series of courses covering, in general, the subject of Biblical Literature. It also offers courses in Modern Religious Problems and in Community Problems, and Seminars, with field work in Practical Applied Christianity, all of which not

only serve as preliminary study for those who expect to enter religious and social activity as a life-work, but also provide a link between the class-room work of the Department and the religious activities of all students.

It is a definite part of Mr. Fales' duties to have oversight of all these activities, to be of help to individual students along the lines of the personal problems of religion and service, and to be the adviser of the Christian Associations. This responsibility the College feels should be in the hands of one who has had successful experience in the direction of religious activities, and of one, moreover, who has a position of permanence in which constructive and cumulative results can be obtained.

The Student Volunteer movement is represented. Of the former members of the band, some are continuing in other institutions their preparation for the foreign field, and others are already actively engaged in missionary work.

At the beginning of the College year, members of the Associations meet all trains and welcome new students.

STUDENT PUBLICATIONS.

The Tiger, a semi-weekly newspaper, is issued by an editorial board composed of College students. An annual, *The Pikes Peak Nugget*, is published by the Junior class. A *Handbook* of information is issued at the beginning of the College year.

LITERARY SOCIETIES.

The Apollonian Club and the Pearsons Literary Society, composed of young men; the Minerva Society, the Contemporary Club, and the Hypatia Society, composed of young women, hold weekly meetings for debate and other literary work.

THE ENGINEERS' CLUB.

The Engineers' Club of Colorado College was organized in the fall of 1910, and is the outgrowth of the Chemical Club. Engineering students of the three upper classes are eligible as members, and Freshmen engineering students are eligible as associate members. Meetings are held in the club room in the Engineering Building every Friday evening; once a month an engineer or business man appears before the club, giving a talk on his especial line; on the other Friday evenings the members present papers and have discus-

sions on engineering problems, current events, and the like. Thus the club not only affords the opportunity for its members to hear talks by successful engineers, but also gives them practice in debating and presenting subjects before an audience.

FORESTERS' CLUB.

A Foresters' Club meets fortnightly during the winter term to consider current events in forestry and discuss papers of professional interest.

THE STUDENT COMMISSION OF COLORADO COLLEGE.

By a charter adopted in the autumn of 1915, a Student Commission was created, composed jointly of delegates from the various student organizations and of officers elected by these delegates. The object of the Commission is to provide a representative body of students which, by virtue of the position and influence of its members in student affairs, shall be able to supervise and control all non-academic activities of the student body as a whole. The members of the Student Commission, elected annually in May, consist for 1915-'16 of the following officers:

EXECUTIVE BOARD.

President—Glen E. Cheley.

Treasurer—Ben C. Becker.

Secretary—Ruth Higgins.

REPRESENTATIVE COUNCIL.

Men's Organizations.

Athletic Board—Mack Davis.

Cossitt Board of Control—Ralph Smythe.

Inter-Fraternity Council—Harry Balch.

Inter-Society Council—Arthur Powell.

Non-Fraternity Men—Charles Seeley.

Women's Organizations.

Dramatic Club—Dorothy Waples.

Inter-Society Council—June Eaton.

Student Government Association—Dorothy Pooler.

Town Girls' Association—Elizabeth Hubbell.

Women's Athletic Association—Helen Caldwell.

Y. W. C. A.—Lois Smith.

Joint Organizations.

Freshman Class—Charles Crockett.

Sophomore Class—John McDougal.

Tiger Board—C. Edgar Taylor.

Vice-President and Senior Representative—Helen Kirkwood.

College Faculty.

Professor Edward C. Schneider.

ORATORICAL AND DEBATING CONTESTS.

All contests in public speaking are in charge of the Department of Public Speaking and the Manager of Debating. Two intercollegiate debates are held during the second half-year, and there is an annual public debate between representatives of the Apollonian Club and the Pearsons Society.

PHI BETA KAPPA.

A charter of the Phi Beta Kappa Society was granted to Colorado College in 1904. The object of the society is the promotion of scholarship and friendship among students and graduates of American colleges. The members of the Society are elected primarily from the best scholars of the graduating classes of the College; secondly, from the graduates of the College whose work after graduation entitles them to such honor; and lastly from any persons distinguished in letters, science, or education. In addition to scholarship, power of leadership and good moral character are the qualifications for membership.

Recently the rules of election to membership have been modified somewhat. Two members are elected from each Junior class. In the Senior year additional elections are made, increasing the total number to not more than one-seventh of the regular members of each graduating class in the College of Arts and Sciences. No student is eligible who does not take his Junior and Senior years in Colorado College.

THE COLORADO COLLEGE PUBLICATION.

Under this title is now included the scientific publication formerly issued as "COLORADO COLLEGE STUDIES," as well as the announcements of the various departments of the College, the an-

nual catalogue, etc. This publication appears every six weeks during the academic year.

The following have been published during the academic year 1913-'14:

Science Series:

Vol. XII., No. 13. The Birds of El Paso County, Colorado.
II.—*Charles E. H. Aiken and Edward R. Warren.*

(General Series, Nos. 75 and 76.)

Language Series:

Vol. II., No. 30. Some Spanish-American Poets.
Elijah Clarence Hills.

Social Science Series:

Vol. II., Nos. 9 and 10. The Frederick H. Cossitt Memorial of
Colorado College.

Bulletin Series:

No. 46. Catalogue of Colorado College.
(General Series No. 79.)

No. 47. Views of Colorado College.
(General Series Nos. 81 and 82.)

COLLEGE LECTURE COURSE.

The College Lecture Course, established in 1894, has been continued annually since that time. These lectures have been given by members of the College Faculty and others, on literary, scientific and popular topics, in Colorado Springs and occasionally in other cities. The lectures are open to the public. In the spring of 1915, two courses were given by Dr. Lawrence J. Henderson, Exchange Professor from Harvard University. The list of titles is as follows:

HISTORY OF SCIENCE.

What is science?

Ancient astronomy and its importance.

Ancient physics.

Ancient and modern science.

The Scientific Renaissance: Harvey.

The Scientific Renaissance: Galileo to Newton.

- The seventeenth century.
- The eighteenth century.
- The great syntheses of the nineteenth century.
- The great syntheses of the nineteenth century.
- The scientific revolution and the Industrial revolution.
- The value of science.

THE ENVIRONMENT.

- Water.
- Carbonic acid.
- The ocean.
- The three elements: hydrogen, oxygen, carbon.

A course including lectures and readings by Prof. S. H. Clark of the University of Chicago, Mrs. Bertha Kunz Baker, and Col. S. S. McClure was given during the winter under the auspices of the English Department.

OFFICERS OF THE ALUMNI ASSOCIATION.

- SPERRY PACKARD, Pueblo.....*President*
- MRS. WILLIS R. ARMSTRONG, Colorado Springs.....*Vice-President*
- ADDIE HEMENWAY, Colorado Srpings.....*Secretary*
- FRED M. GERLACH, Colorado Springs.....*Treasurer*

- SPERRY PACKARD
 - MRS. WILLIS R. ARMSTRONG
 - ADDIE HEMENWAY
 - FRED M. GERLACH
 - LILLIAN JOHNSON
 - MRS. LESTER McLEAN, JR.
 - LLOYD SHAW
 - HERBERT SINTON
-*Executive Committee*

EXPENSES.

- Tuition by the year (except in department of Forestry).....\$60.00
- Tuition in Department of Forestry:
 - Regular course for full year (ten months)..... 70.00
 - Summer Course alone (four weeks)..... 12.00
- Students who register for less than eight hours of work pay the usual entrance fees, and \$10.00 for each half-

year course. Anyone wishing to attend lectures or recitations without receiving credit upon the College records may secure the privilege of such attendance on the payment of \$5.00 for each half-year course.

Matriculation fee.....\$ 5.00

(From the above-named fees there is no rebate in case of withdrawal or dismissal.)

Athletic and "Associated Students" fee..... 5.00

Board by the half-year in halls (for women)..... 75.00

Board in the Spring vacation, by the week..... 4.00

Board in Cossitt Hall (for men) á la carte, average per week.... 4.50

Rooms, warmed, furnished, and lighted, by the year, for each occupant.....\$40.00 to 80.00

The standard rental is \$80. The number of rooms under that price is very limited. Application should be made early. Rooms are rented by the year, and will be retained for incoming students only when the application is accompanied by a deposit of \$5.00. This fee will be credited on the bills for room rent, and will be refunded only in case the room is given up by September first.

No young woman will be received into the halls who is not of full college rank, who is less than sixteen years of age, and who is not taking at least fifteen hours' work or its equivalent. Young women from out of town are required to live on the campus.

The women's residence halls are usually closed during the Christmas recess for cleaning and repairs.

Young men who room off the campus can obtain rooms at prices similar to those charged by the College.

Students who room in the College residences are required to furnish towels, bed linen, and blankets.

Nurse's fee (for young women only): see p. 118.....\$5.00

Fees of College physician:

Office consultation..... .50

Visits to rooms..... 1.00

Infirmary fee (including meals), a day..... 1.00

For prolonged illness and in cases of contagious diseases, a special nurse is employed, and the expenses are charged to the patient.

The following is an estimate of the necessary expenses for the

college year (not including matriculation fee, nurse's fee, cost of text-books, laundry, and incidentals) :

Tuition, \$30 each half-year.....	\$ 60.00	\$ 60.00
Room rent, \$20 to \$40 each half-year.....	40.00	80.00
Board, \$75 each half-year.....	150.00	150.00
	<hr/>	<hr/>
	\$250.00	\$290.00

In addition to these items, fees are charged for the use of apparatus and materials in the various laboratories, as follows: Biology, p. 56; Chemistry, p. 62; Civil 2, p. 62; Civil 82, p. 67; Electrical Laboratory, p. 75, note; Geology (Course 2), p. 82; Physics, p. 100; Psychology, p. 94; Shop, p. 107; Field courses in Surveying, pp. 67-68. (These fees are paid directly to the respective departments at the beginning of each term.)

An additional charge of \$5.00 is made on the last term bill of the Seniors to cover expenses of graduation.

The bills for tuition, room rent, and board are issued at the beginning of each half-year, and are payable immediately. Students who withdraw before the end of the term pay full tuition. Students who withdraw less than six weeks before the end of the term pay full board and room rent. No deduction will be made for short absences during the term. In case of withdrawal more than six weeks before the end of the term, half of the room rent and the whole of the amount paid for board for the unexpired portion of the term will be returned to the student. The date of withdrawal is reckoned from the time when official intimation of the fact has been received from parent or guardian.

The College reserves the right to exclude at any time students whose conduct or academic standing renders them undesirable members of the college community; and in such cases the fees due the college are not refunded or remitted.

Remittances should be made by draft or money order.

The degree will not be granted to any student whose college bills are not paid before Commencement.

SCHOLARSHIPS.

The income of the following scholarships is devoted to the aid of worthy students who may need assistance in completing their

course, and who, by their scholarship and character, prove themselves worthy of such assistance:

The Thomas Davee Scholarship of \$500, established by the late Mrs. T. V. D. Mitchell, of West Minot, Maine.

The Rice Scholarship of \$700, established by friends of the Rev. Chas. B. Rice, D.D., of Danvers, Mass.

The Currier Scholarship of \$1,000 founded by the late Hon. Warren Currier, of St. Louis, Mo.

The Edwards Scholarship of \$500, given by the Congregational Church of Wellesley Hills, Mass.

The Mary Caroline Quincy Scholarship of \$500, given by the late George Henry Quincy, of Boston, Mass.

The Lawrence Myers Scholarship of \$1,000, and the Lucy Platt Myers Scholarship of \$1,000, given by Mrs. Lætitia M. Myers, of Plainfield, New Jersey.

The Fay Scholarship of \$1,000, founded by the late Eliza A. Fay, of Boston, Mass.

A Scholarship of \$1,000 given by Mr. William F. Richards of Colorado Springs, through the Woman's Educational Society of Colorado Springs.

The Willard B. Perkins Scholarship of \$7,000. The second Willard B. Perkins Scholarship of \$7,000. These two scholarships were given by the late Willard B. Perkins, of Colorado Springs.

The Hawley Scholarship Fund of the Woman's Educational Society, now amounting to about \$10,000, founded by the will of Mrs. Mary R. Hawley, of Baltimore, Md., the annual income of which is used in the payment of scholarships of such young women of the College as the Faculty may recommend, preference being given to daughters of home and foreign missionaries.*

The Hawley Scholarship Fund of Colorado College, now amounting to about \$9,000, founded by the will of Mrs. Mary R. Hawley, of Baltimore, Md., the annual income of which is used in the payment of scholarships for such students of the College as the Faculty may recommend who may be fitting themselves for distinctively Christian work.*

*Students who desire to have their names considered, must make application.

The Hawley Memorial Fund, now amounting to about \$9,000, founded by the will of Mrs. Mary R. Hawley, of Baltimore, Md., in memory of her husband, Mr. Martin Hawley, the annual income of which is loaned to "worthy and deserving students of the College, as the Faculty may see proper."

The Strettell Memorial Fund of \$2,000, given by Mrs. Alma G. V. Harrison, of London, England, and General William J. Palmer, of Colorado Springs, in memory of Mr. Arthur E. V. Strettell, Mrs. Harrison's brother, who died in Colorado Springs in 1882. The income of this fund is to be used to aid students suffering from lung troubles.

The Mary G. Slocum Scholarship of \$100 a year, given by the Woman's Educational Society of Colorado College. This scholarship is awarded on the basis of competition to young men of the Junior Class.

The Ruth Danforth Scholarship of \$1,000, established by Mrs. Emma Danforth Wiley, of Colorado Springs.

The Elizabeth C. McAllister Scholarship of \$1,000, established by members of her family.

Several other scholarships are supported by annual subscriptions.

SELF-SUPPORT.—Advanced students of high standing have occasional opportunities for private teaching. Capable and faithful young men can usually find work in town. During the present year the Employment Bureau of the College has secured about 250 positions for students. A limited amount of service in Bemis Hall is offered to young women; this is not often available for first-year students.

PRIZES.

The Hastings Prizes.—The sum of \$1,000 has been given by the late Mr. Frederic R. Hastings, of Colorado Springs, the income of which is to be used in providing prizes for sufficiently creditable theses produced by students in Philosophy 13.

THE WOMAN'S EDUCATIONAL SOCIETY.

This Society was formed in April, 1889, by the women of Colorado Springs. Its purpose, as expressed in its constitution, "is to give physical, intellectual, and spiritual aid to students in any depart-

ment of Colorado College." This Society built Montgomery Hall, furnished Ticknor and McGregor Halls, and has been of service in many ways to the College. It endeavors to help the members of the Faculty in their personal work for students, especially those who are self-supporting.

First.—Loans may be made to students who have been in the College for one half-year and are recommended by the Faculty as in every way deserving of such aid.

Second.—No student shall be allowed to incur an indebtedness to the Society of more than \$300.00.

Third.—Students may receive loans without interest until their connection with the College ceases; after that time their notes shall draw interest at 4 per cent.

For the scholarships within the gift of the Society, see p. 144. The officers for the current year are:

President—Mrs. William F. Slocum.

First Vice-President—Mrs. M. C. Gile.

Second Vice-President—Mrs. L. J. Skelton.

Third Vice-President—Mrs. F. E. Brooks.

Recording Secretary—Miss Marianna Brown.

Corresponding Secretary—Mrs. E. C. Hills.

Treasurer—Mrs. Florian Cajori.

Auditor—Willis R. Armstrong.

HOSPITAL FUND.

The Trustees of the Bellevue Sanitarium have given to the College nearly \$4,000 as the nucleus of a hospital fund for the students.

THE NEEDS OF THE COLLEGE.

Colorado College, never more truly than today, has great and pressing needs. Its growth during the last fifteen years has been steady and rapid, and its friends have generously assisted in helping to meet its constantly enlarging opportunity. If it is to do the work which legitimately belongs to it and have its part in meeting the educational demands of the great section of the country in which it is located, if it is to provide a thorough and broad training under positive Christian influences for those who are coming to it in con-

stantly increasing numbers, not only from Colorado, but from the entire country, it must have in the immediate future larger resources than those upon which it has been obliged to rely during the last few years.

Among the pressing needs are the following:

General Endowment.—For the last ten years the College has been doing a work equal in amount and quality to that done by older eastern institutions possessing a much larger endowment. In consequence each year a deficit has had to be faced. A much larger sum than it has at present must be provided if the College is to go forward to fill its place in the educational life of the country.

Professorships.—It is hoped that one form in which this larger endowment will be bestowed is in the provision of permanent funds for individual professorships.

Funds for the Library.—The library has only a few hundred dollars of permanent funds. It must rely for increase upon gifts and upon purchases made out of current expense funds to meet the absolute requirements of the different departments. There is an imperative need for money to be used at once in the filling of gaps in the material the library already possesses, and also for permanent funds from which additions may be regularly made in accordance with the varied intellectual needs of the College.

Special Funds for Scientific Research.—Money to be devoted to scientific work in special lines is very greatly needed. The opportunities of Colorado College in this direction are unusual, because of the geographical, meteorological, and geological situation. The attention of those interested in the advancement of science is earnestly called to this fact.

Funds for the Department of Engineering.—This department of the College needs a considerable sum of money to be immediately expended in the proper development of its work, and also a large endowment fund to secure its stability and future growth. Large gifts bestowed for these ends will directly aid in the development of the rich resources of Colorado and the adjoining mountain states.

Scholarships.—The Trustees desire to emphasize the fact that many young people in a new country are obliged to earn their education by hard and self-denying work. Colorado College still needs

a large addition to her scholarship funds. Money thus applied tends directly to the profit of the individual and of the country.

Fellowships.—It would be of great value in developing higher standards of scholarship if several graduate fellowships in various departments could be established.

Infirmary.—The infirmary in Ticknor Hall, which is available for young women only, is inadequate to the growing needs of the College. There should be provided a separate building, in which contagious diseases can be cared for, as well as ordinary cases of illness. A fund has been started for the endowment of a cot, for use in case of illness among students who are working their way. Additions to this fund are an urgent need.

FORMS OF BEQUEST.

Those who intend to devise property to Colorado College, or to the Woman's Educational Society, are requested to employ one of the following Forms of Bequest:

"I hereby give, devise, and bequeath, unto The Colorado College of Colorado Springs, Colorado, the sum of.....Dollars."

"I hereby give, devise, and bequeath unto the Woman's Educational Society of Colorado College, of Colorado Springs, Colorado, the sum of.....Dollars."

If property other than money is willed, the form should be correspondingly varied.

Commencement, 1915

Award of Honors

HIGH HONORS.

Helen Bourquin, '15	Ruth Graham Collins, '17
Florence Angela Youngman, '15	Edwin Frickey, '17
Lucy Jewell, '16	Myriam Christy Garrett, '17
Lois Steuerwald, '16	Charles Edgar Taylor, '17
Ernest Amos Johnson, '18	

HONORS.

Lillian Catren, '15	Frank Edward Evans, '16
Harold Thayer Davis, '15	Irene Brownlee Donaldson, '17
Marjorie May Snyder, '15	William Armstead Campbell, '18
Elbert Staughton Wade, '15	Edith Irene Glassford, '18

Award of Scholarships

PERKINS SCHOLARS.

Ruth Collins, '17	Myriam Garrett, '17
Charles Edgar Taylor, '17	

MARY G. SLOCUM SCHOLAR.

Charles K. Seeley, '16

Phi Beta Kappa Elections.

William Chenault Argo, '15	Marjorie May Snyder, '15
Beatrice Marion Berwick, '15	Elbert Staughton Wade, '15
Helen Bourquin, '15	Florence Angela Youngman, '15
Eva Brooks, '15	Frank Edward Evans, '16
Lillian Catren, '15	Lois Steuerwald, '16

Degrees Conferred, Commencement, 1915

DEGREES IN COURSE.

MASTER OF ARTS.

Dupertuis, Jean	Greene, May Louise
Gerlach, Frederick Matthew	Jackson, Helen
Smith, Lois Ellett	

BACHELOR OF ARTS.

Magna cum Laude.

Beatrice Marion Berwick	Harold Thayer Davis
Helen Bourquin	Marjorie May Snyder
Pearl May Brennicke	Florence Angela Youngman

Cum Laude.

William Chenault Argo	Harriet Peckham Ferril
Dorothy Margaret Armstrong	Eleanor Elizabeth Forsee
Emma Ruth Bates	Alice Darling Mason
Eva Brooks	Edna Matilda Stuntz
Lillian Catren	Elbert Staughton Wade
	Dorothy Wilkin

Adams, Clarence Morrison	Knutzen, Marguerite
Barr, Orpha Alta	McCoy, Linda
Bartlett, Agnes Griswold	McNeil, Frederick Brainard
Bower, Marie	McReynolds, Edna Earl
Boyd, Helen Shelley	Ormes, Jean Harriet
Brewer, Edyth Lillian	Parsons, Charles Edwards
Brown, Olive	Roberts, Llewellyn D.
Carley, Maurine Osa	Robinson, George De Witt
Crutcher, Hester Brandenburg	Sasano, Kakutaro Thomas
Dennis, George Wesley	Sawhill, Ray
Emery, Charles Francis	Schuyler, Cornelia Elizabeth
Erikson, Statie Estelle	Strawn, Bernadine
Gardner, Helen	Sumner, Mary Beatrice
Gethmann, Mary Mabel	Taylor, Milford Edson
Hall, James Smith	Tweedy, Ira Otis
Hemenway, Florence Louise	Van Stone, Wilfred
Hopkins, Guy Huskinson	Wallace, Ruth Margaret
Johnson, Blanche Juliet	Williams, Judson Thomas
Kampf, Frederick William	Zirkle, Mina Belle
Kelsey, Ruth Marie	

BACHELOR OF ARTS IN BANKING AND BUSINESS ADMINISTRATION.

Border, Chauncy Abraham

Grimsley, Richard Elmo

BACHELOR OF SCIENCE IN CIVIL ENGINEERING.

Crampton, John Heugh

Howland, Wendell Barker

Miller, Clinton Van Giesen

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING.

Anderson, Conrad Herman

Daw, Arthur Henry

Brunner, Henry Harris

Jeanne, Paul Andrew

FOREST ENGINEER.

Hall, Ralph Lyman

Students

GRADUATE STUDENTS.

NAME.	HOME ADDRESS	CITY ADDRESS.
Lois A. Akin, A.B. Colorado College, '12	<i>Colorado Springs.</i>	832 N. Spruce St.
Ruth Banning, A.B. Wellesley College, '15	<i>Colorado Springs.</i>	831 N. Nevada Ave.
Harry Lee Black, A.B. Colorado College, '12.	<i>Colorado Springs.</i>	School for Deaf and Blind.
Nelson Renfrew Park, A.B. Colorado College, '14	<i>Longmont, Colo.</i>	Hagerman Hall.
Henry Charles Rehm, LL.B. University of Wisconsin, '99	<i>Colorado Springs.</i>	929 N. Nevada Ave.
B.D. Oberlin Seminary, '06		
Katherine Denise Wollaston, Ph.B., Univ. of Chicago, '13	<i>Chicago, Ill.</i>	Bemis Hall.

SENIORS.

Allward, Charlotte Pearson	<i>Colorado Springs.</i>	218 E. St. Vrain St.
Balch, Harry Hughes (B)	<i>Greeley, Colo.</i>	1125 N. Nevada Ave.
Bancroft, Bertha May	<i>Marshall, Minn.</i>	1117 N. Hancock Ave.
Barnett, Margaret Elizabeth	<i>Denver, Colo.</i>	Bemis Hall.
Barney, Martin Davis	<i>Colorado Springs.</i>	1828 N. Nevada Ave.
Bartlett, Harriet Morgan	<i>Colorado Springs.</i>	2220 N. Nevada Ave.
Becker, Bernard Carl	<i>Belen, N. Mex.</i>	1106 N. Weber St.
Bejach, Maurice Dilliard	<i>Colorado Springs.</i>	505 E. Boulder St.
Bennett, Hila India	<i>Colorado Springs.</i>	301 N. Walnut St.
Bowman, Bernice Olive	<i>Colorado Springs.</i>	119 E. Dale St.
Brooks, Hattie Estella	<i>Colorado Springs.</i>	1820 Washington Ave.
Caldwell, Blanche Edna	<i>Ft. Dodge, Ia.</i>	Bemis Hall.
Cheley, Glen Evan	<i>Colorado Springs.</i>	424 S. Tejon St.
Christy, William Glen	<i>Eureka, Kans.</i>	1319 N. Nevada Ave.
Coltrin, Charles Wesley	<i>Franklin, Neb.</i>	505 N. Cascade Ave.
Conrad, Mary Salome	<i>Colorado Springs.</i>	117 E. Espanola St.
Crissey, Marjorie	<i>Colorado Springs.</i>	615 N. Cascade Ave.
Cunningham, Rachel	<i>Denver, Colo.</i>	Bemis Hall.
Dixon, John Philip	<i>Colorado Springs.</i>	2819 N. Cascade Ave.
Dockstader, Henry Peter (E)	<i>Colorado Springs.</i>	1316 N. Nevada Ave.
Eaton, Elizabeth June	<i>Eaton, Colo.</i>	Bemis Hall.
Estabrook, Mary Evelyn	<i>Denver, Colo.</i>	Bemis Hall.
Evans, Frank Edward (B)	<i>Colorado Springs.</i>	1912 N. Tejon St.
Fuller, Lillian Eliza	<i>Colorado Springs.</i>	1429 N. Weber St.
Gault, Elva Maude	<i>Pueblo, Colo.</i>	Bemis Hall.
Geissler, Anna Louise	<i>Colorado Springs.</i>	233 N. Franklin St.
Graves, Cecil Henry	<i>Colorado Springs.</i>	1222 Lincoln Ave.
Greenlee, Lawrence Albert (B)	<i>Bellaire, Ohio</i>	1106 N. Weber St.
Hadley, Edna Margaret	<i>Colorado City, Colo.</i>	112 Colo. Av., Colo. City
Hall, Frank Herbert	<i>Monett, Mo.</i>	1106 N. Weber St.
Hallock, Rachel Maryette	<i>Denver, Colo.</i>	Bemis Hall.
Hamilton, Edith Magill	<i>Cañon City, Colo.</i>	Bemis Hall.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Harrison, Charles Allison	<i>Colorado Springs.</i>	823 E. Boulder St.
Heald, Helen Carolyn	<i>Denver, Colo.</i>	Bemis Hall.
Henderson, Isabel Corbin	<i>Sterling, Colo.</i>	Bemis Hall.
Hensley, Elinor	<i>Denver, Colo.</i>	Bemis Hall.
Hensley, Mary Olive	<i>Denver, Colo.</i>	Bemis Hall.
Higgins, Ruth	<i>Pueblo, Colo.</i>	Bemis Hall.
Holm, Agnes Marie	<i>Falcon, Colo.</i>	1121 N. Tejon St.
Holmes, Charles Ludswell	<i>Colorado Springs.</i>	315 Center St.
Hubbell, Elizabeth Guion	<i>Colorado Springs.</i>	1915 Wood Ave.
Hyde, James Francis Clark (E)	<i>Nashville, Tenn.</i>	Hagerman Hall.
Jewell, Lucy Cornelia	<i>Colorado Springs.</i>	Bemis Hall.
Johnson, Elva Caroline	<i>Colorado Springs.</i>	331 E. Willamette St.
Kirkwood, Helen Grace	<i>Colorado Springs.</i>	1409 S. Nevada Ave.
Kramer, Harry Stillman	<i>Las Animas, Colo.</i>	1122 N. Cascade Ave.
Latimer, Charles Trowbridge	<i>Colorado Springs.</i>	1031 N. Wahsatch Ave.
Leipheimer, Helen Lillian	<i>Colorado Springs.</i>	629 N. Weber St.
Long, Mildred	<i>Denver, Colo.</i>	Bemis Hall.
McCammon, Floyd F. (E)	<i>Colorado Springs.</i>	14 S. 18th St.
Morse, Levi Parminter	<i>Grand Junction, Colo.</i>	1106 N. Weber St.
Mueller, Dorothy	<i>Kansas City, Mo.</i>	Bemis Hall.
Nelson, Robert Rutherford	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Pick, Bertha Merea	<i>Colorado Springs.</i>	Bemis Hall.
Pooler, Dorothy Hazel	<i>Austin, Minn.</i>	Bemis Hall.
Ransdell, Hollace Vivian	<i>Colorado Springs.</i>	813 N. Wahsatch Ave.
Ritterman, Chloie M.	<i>Hawley, Minn.</i>	501 E. Boulder St.
Ritterman, Ralph W.	<i>Hawley, Minn.</i>	501 E. Boulder St.
Roberts, Ivor Simpson	<i>Springfield, Ky.</i>	1122 N. Cascade Ave.
Roeser, Jacob Jr. (F)	<i>Manitou, Colo.</i>	Manitou, Colo.
Ross, Willard Cherrington	<i>Grand Junction, Colo.</i>	1319 N. Nevada Ave.
Savage, Laura Ada	<i>Billings, Mont.</i>	Bemis Hall.
Savage, Lucy Eunice	<i>Billings, Mont.</i>	Bemis Hall.
Seeley, Charles Kingery	<i>La Junta, Colo.</i>	Hagerman Hall.
Smith, Lois Elizabeth	<i>Denver, Colo.</i>	Bemis Hall.
Smythe, William Ralph	<i>Colorado Springs.</i>	Hagerman Hall.
Sprengle, Eva May	<i>Pueblo, Colo.</i>	Bemis Hall.
Stanard, Margaret Emily	<i>Pueblo, Colo.</i>	Bemis Hall.
Steuerwald, Lois	<i>Longmont, Colo.</i>	Bemis Hall.
Sweetser, Mary Louise	<i>Colorado Springs.</i>	1729 N. Corona St.
Taylor, Charles Edgar	<i>Colorado Springs.</i>	225 E. Jefferson St.
Taylor, Clarion Wells	<i>Colorado City, Colo.</i>	429 Lincoln Ave.
Thompson, Jeannette	<i>Salt Lake City, Utah</i>	Bemis Hall.
Turner, Merrill Henry	<i>Eaton, Colo.</i>	1122 N. Cascade Ave.
Van Diest, Alice Elfrieda	<i>Colorado Springs.</i>	719 N. Nevada Ave.
Walker, Prudence May (B)	<i>Grand Junction, Colo.</i>	Bemis Hall.
White, Lavina Belle	<i>Pueblo, Colo.</i>	Bemis Hall.
Williams, Russell Ventres (E)	<i>Idaho Springs, Colo.</i>	1319 N. Nevada Ave.
Winternitz, Elizabeth	<i>Colorado City, Colo.</i>	319 Colorado Ave.
Wright, Lillian	<i>Colorado Springs.</i>	1414 Lincoln Ave.

JUNIORS.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Baldwin, Jeffery Mathewson	<i>Oberon, N. D.</i>	Plaza Hotel.
Belk, Dorothea	<i>Colorado Springs.</i>	McGregor Hall.
Bispham, Miriam Freeman	<i>Colorado Springs.</i>	2111 N. Nevada Ave.
Bock, Adolph	<i>St. Joseph, Mo.</i>	1207 Washington Ave.
Bowers, Hazel	<i>Colorado Springs.</i>	2008 N. Nevada Ave.
Boyd, Edith	<i>Colorado Springs.</i>	1220 N. Tejon St.
Bradley, Ruth Elizabeth	<i>Colorado Springs.</i>	430 W. Pikes Peak Av.
Brooks, Adin Paul	<i>Colorado Springs.</i>	1820 Washington Ave.
Brooks, Effie Maria	<i>Brookston, Colo.</i>	1121 N. Tejon St
Bryson, Florence June	<i>Pueblo, Colo.</i>	Ticknor Hall.
Caldwell, Helen Elizabeth	<i>Brookings, S. D.</i>	McGregor Hall.
Carlson, Georgia May	<i>Denver, Colo.</i>	Ticknor Hall.
Carnahan, Mary Kathryn	<i>Rico, Colo.</i>	McGregor Hall.
Carrick, Mattie Louise	<i>Colorado Springs.</i>	1430 N. Weber St.
Clemans, Martha Elizabeth	<i>Colorado Springs.</i>	17 E. Dale St.
Collins, Ruth Graham	<i>Colorado Springs.</i>	McGregor Hall.
Cunningham, Blanche Agnes	<i>Denver, Colo.</i>	McGregor Hall.
Dawson, Ruth Elizabeth	<i>Denver, Colo.</i>	Ticknor Hall.
Donaldson, Agnes Scott	<i>Colorado Springs.</i>	1723 Wood Ave.
Donaldson, Irene Brownlee	<i>Denver, Colo.</i>	McGregor Hall.
Esmiol, Morris Alfred (B)	<i>Denver, Colo.</i>	1105 N. Nevada Ave.
Flora, Harriette Pearl	<i>Colorado Springs.</i>	2129 N. Nevada Ave.
Frickey, Edwin	<i>Brush, Colo.</i>	316 E. Dale St.
Garnett, Anna Maud	<i>Pueblo, Colo.</i>	Ticknor Hall.
Garrett, Myriam Christy	<i>Colorado Springs.</i>	710 N. Cascade Ave.
Gebhardt, Glenn Leslie (E)	<i>Cañon City, Colo.</i>	Hagerman Hall.
Gill, Rose Miriam	<i>Vinita, Okla.</i>	McGregor Hall.
Glezen, Lee Louis (E)	<i>Colorado Springs.</i>	727 N. Wahsatch Ave.
Graham, Margery	<i>Pueblo, Colo.</i>	McGregor Hall.
Hamilton, Sara Grace	<i>Colorado Springs.</i>	315 E. Willamette Ave.
Hassell, Julia Frances	<i>Colorado Springs.</i>	1424 Wood Ave.
Henn, Samuel Chester	<i>Paonia, Colo.</i>	1106 N. Weber St.
Holman, Newton Davis	<i>Colorado Springs.</i>	425 E. St. Vrain St.
Hunt, Winifred Belle	<i>Denver, Colo.</i>	McGregor Hall.
Huston, Harold	<i>Manzanola, Colo.</i>	209 N. 7th St.
Hutchison, Mary Elizabeth	<i>Colorado Springs.</i>	732 N. Wahsatch Ave.
Johnson, Arthur Iver (E)	<i>Salt Lake City, Utah</i>	314 E. Dale St.
Joslin, Doyle	<i>Colorado Springs.</i>	530 E. Platte Ave.
June, Perry Ellsworth	<i>Colorado Springs.</i>	216 E. St. Vrain St.
Keeth, Frances	<i>Colorado Springs.</i>	308 E. Platte Ave.
King, Bertha L.	<i>Montezuma, Ia.</i>	Ticknor Hall.
Kingman, Victor Christie (E)	<i>Colorado Springs.</i>	530 N. Nevada Ave.
Lennox, Helen Virginia	<i>Colorado Springs.</i>	1339 N. Nevada Ave
Liljestrom, George William (E)	<i>Pueblo, Colo.</i>	1125 N. Nevada Ave.
McKesson, William	<i>Colorado Springs.</i>	631 N. Weber St.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Martin, Earl Gilbert (E)	<i>Loveland, Colo.</i>	1111 Wood Ave.
Maxwell, Raymond Waldron	<i>Colorado Springs.</i>	1517 N. Weber St.
Merrill, Glen (F)	<i>Grand Junction, Colo.</i>	723 N. Weber St.
Merrill, Madre	<i>Colorado Springs.</i>	226 E. Monument St.
Meyer, Grace Rosella	<i>Colorado Springs.</i>	Ticknor Hall.
Mimmack, Rufus Frederick	<i>Eaton, Colo.</i>	1117 N. Nevada Ave.
Moseley, Helen Fern	<i>Pueblo, Colo.</i>	McGregor Hall.
Neff, Kinzie Benewell (B)	<i>Delta, Colo.</i>	Plaza Hotel.
Neuswanger, Peter Christopher	<i>Greeley, Colo.</i>	1122 N. Cascade Ave.
Nicholson, Helen	<i>Colorado Springs.</i>	110 S. Wahsatch Ave.
Nowels, Kenneth Busey	<i>Colorado Springs.</i>	721 W. Cucharas St.
Paulson, Paul Alvin	<i>Basin, Wyo.</i>	Administration Bldg.
Pennington, Lloyd Alfred (B)	<i>Colorado Springs.</i>	2208 N. Nevada Ave.
Perryman, Lora Arabelle	<i>Overbrook, Kan.</i>	611 N. Wahsatch Ave
Powell, Arthur Lester (E)	<i>Cañon City, Colo.</i>	1210 Wood Ave.
Reed, Cecil David (E)	<i>Colorado Springs.</i>	111 E. San Miguel St.
Richardson, Irma Maude	<i>Cañon City, Colo.</i>	Ticknor Hall.
Rogers, Barrett Frank	<i>Atlanta, Ill.</i>	9 E. Dale St.
Sager, Henry	<i>Custer, S. D.</i>	312 N. Cascade Ave.
Shadowen, Ethel May	<i>Ft. Morgan, Colo.</i>	Ticknor Hall.
Slack, Arthur Benjamin (B)	<i>Lazear, Colo.</i>	1125 N. Nevada Ave.
Spalding, John William (B)	<i>La Junta, Colo.</i>	1122 N. Cascade Ave.
Sumner, John Robert Carew	<i>Colorado Springs.</i>	230 E. Yampa St.
Tamayo, Fernando Carlos	<i>San Cristobel, Tachira, Venezuela.</i>	Administration Bldg.
Taylor, Charles Chauncey (E)	<i>Colorado Springs.</i>	1526 Hayes St.
Taylor, Theron Jack (B)	<i>Colorado Springs.</i>	1230 Glen Ave.
Totten, Helen	<i>Haddam, Kan.</i>	Ticknor Hall.
Van Diest, Annette Josine	<i>Colorado Springs.</i>	719 N. Nevada Ave.
Vickers, Denver	<i>Colorado Springs.</i>	419 N. Wahsatch Ave.
Vorrath, Adele Frederica	<i>Colorado Springs.</i>	219 E. Fontanero St.
Walker, Bertha	<i>Grand Junction, Colo.</i>	McGregor Hall.
Wallrich, Florence Edna	<i>Alamosa, Colo.</i>	McGregor Hall.
Walsworth, Mrs. Lutie	<i>Colorado Springs.</i>	713 S. Sheridan Ave.
Waples, Dorothy	<i>Cody, Wyo.</i>	Ticknor Hall.
Whipple, Marjorie Helen	<i>Cheyenne, Wyo.</i>	McGregor Hall.
Williams, Lyle Gayle	<i>Colby, Kan.</i>	McGregor Hall.
Wilson, Beulah Glee	<i>Manitou, Colo.</i>	Ticknor Hall
Wubben, Horace Jay	<i>Paonia, Colo.</i>	1140 Wood Ave.
Yokoyama, Matsusaburo	<i>Mito City, Japan.</i>	1130 Wood Ave.
Zimmerman, Orville Lance (F)	<i>Waldron, Mich.</i>	525 N. Weber St.

SOPHOMORES.

Acker, Robert S. (B)	<i>Manitou, Colo.</i>	Manitou, Colo.
Adams, Carol Worthington	<i>Ft. Collins, Colo.</i>	McGregor Hall.
Alps, Bayard Garfield (B)	<i>Loveland, Colo.</i>	928 N. Weber St.
Anderson, Eugene Linnae (E)	<i>Colorado Springs.</i>	1129 Washington Ave.

NAME.

HOME ADDRESS.

CITY ADDRESS.

Arnold, Landis J.	<i>Colorado Springs.</i>	423 N. Wahsatch Ave.
Baenteli, Gertrude Rosalie	<i>Chicago, Ill.</i>	1228 N. Weber St.
Baker, Sara Emma	<i>Colorado Springs.</i>	1006 E. Platte Ave.
Barber, Alma Louise	<i>Colorado Springs.</i>	507 N. Tejon St.
Beavers, James Leslie (B)	<i>Lamar, Colo.</i>	911 N. Nevada Ave.
Bitting, Floy Elizabeth	<i>Sherman, Texas.</i>	McGregor Hall.
Bottler, Joseph Sebastian	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Boucher, Paul Edward	<i>Hasty, Colo.</i>	1014 N. Weber St.
Bragdon, Warren Brooks (B)	<i>Colorado Springs.</i>	1121 N. Wahsatch Ave
Bunker, Jerome Vickers	<i>Greeley, Colo.</i>	1106 N. Weber St.
Burgener, Charles Edward	<i>Loveland, Colo.</i>	720 N. Cascade Ave.
Burgess, Louise Martin	<i>Colorado Springs.</i>	730 N. Nevada Ave.
Burlingame, Robert Miles	<i>Denver, Colo.</i>	1106 N. Nevada Ave.
Caldwell, Jesse Carter (E)	<i>Longmont, Colo.</i>	1106 N. Weber St.
Campbell, William Armstead	<i>Colorado Springs.</i>	424 N. Nevada Ave.
Carpenter, Helen Bowen	<i>Mancos, Colo.</i>	McGregor Hall.
Carrick, Eilene Gregory	<i>Colorado Springs.</i>	1430 N. Weber St.
Carroll, Kathleen Gardner	<i>Colorado Springs.</i>	306 E. Bijou St.
Carthy, Helen Grace	<i>Salt Lake City, Utah</i>	McGregor Hall
Cheese, Naomi Celia	<i>Peyton, Colo.</i>	1303 N. Wahsatch Ave
Clark, Catherine	<i>Aspen, Colo.</i>	Montgomery Hall
Clough, Marie Catherine	<i>Colorado Springs.</i>	623 N. Tejon St.
Coffin, Dorothy Huntington	<i>Colorado Springs.</i>	620 E. Columbia St.
Coldren, Fred George (B)	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Cook, Nell	<i>Cañon City, Colo.</i>	Montgomery Hall.
Cooper, Lysle Winston	<i>Colorado Springs.</i>	705 S. Nevada Ave.
Cover, Lee Hulbert (B)	<i>Rocky Ford, Colo.</i>	1122 N. Cascade Ave.
Crane, Dorothy Dunbar	<i>Ridgefield, Conn.</i>	McGregor Hall.
Cummings, Dwight A.	<i>Colorado Springs.</i>	502 High St.
Davis, Chester Earl (B)	<i>Loveland, Colo.</i>	1122 N. Cascade Ave.
Davis, William Jennings (B)	<i>Delta, Colo.</i>	1319 N. Nevada Ave.
Davison, Elizabeth Leavitt	<i>Colorado Springs.</i>	224 E. Yampa St.
De Freece, Paul Raymond	<i>Sidney, Iowa.</i>	
Deutschbein, Joseph Anten	<i>Haarlem, Holland</i>	Administration Bldg.
Draher, Gladys	<i>Beloit, Kan.</i>	McGregor Hall.
Dudley, Donald Ashworth (E)	<i>Colorado Springs.</i>	14 Cheyenne Rd.
Dunlavy, Eva Irene	<i>Trinidad, Colo.</i>	McGregor Hall.
Durbin, Helen Avery	<i>Denver, Colo.</i>	Ticknor Hall.
Durkee, Alpha Louise	<i>Manitou, Colo.</i>	Manitou, Colo.
Dworak, Alfred Vance (B)	<i>Longmont, Colo.</i>	1106 N. Weber St.
Dworak, Frances Emma	<i>Colorado Springs.</i>	1203 Grant Ave.
Edgar, Lea Blanche	<i>Colorado Springs.</i>	1330 Washington Ave.
Farmer, Grace Eleanor	<i>Cañon City, Colo.</i>	McGregor Hall.
Ferril, Thomas Hornsby	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Field, Mildred	<i>Colorado Springs.</i>	422 E. Willamette Ave
Freeman, Marie	<i>Colorado Springs.</i>	734 E. Boulder St.
Fukushima, Iwao (E)	<i>Cheyenne, Wyo.</i>	7 Pelham Place

NAME.	HOME ADDRESS.	CITY ADDRESS.
Gardner, Lillian Eloise	<i>Silverton, Colo.</i>	228 E. Yampa St.
Garside, Benjamin Charles Jr.	<i>Denver, Colo.</i>	1125 N. Nevada Ave.
Gates, Lillian Carpenter	<i>Sapulpa, Okla.</i>	Montgomery Hall.
Geiser, Claude William (B)	<i>Monte Vista, Colo.</i>	1106 N. Weber St.
Gibson, Merle Veron (B)	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Gilliland, Harold Edward (B)	<i>La Junta, Colo.</i>	Hagerman Hall.
Glassford, Edith Irene	<i>Grand Junction, Colo.</i>	Montgomery Hall.
Gleason, Ruth	<i>Austin, Minn.</i>	McGregor Hall.
Goss, Jessie Mae	<i>Colorado Springs.</i>	1715 N. Weber St.
Gregg, Golda Mae	<i>Austin, Minn.</i>	McGregor Hall.
Griffith, Henry Kean	<i>Cory, Colo.</i>	Hagerman Hall
Hamilton, Paul Myron	<i>Colorado Springs.</i>	731 N. Weber St.
Harlan, Lois Logan	<i>Colorado Springs.</i>	905 Cheyenne Rd.
Harrison, Hazel Dawn	<i>Goldfield, Colo.</i>	Ticknor Hall.
Holm, Peter Cornelius (B)	<i>Falcon, Colo.</i>	1106 N. Weber St.
Hollister, George Eddy (E)	<i>Denver, Colo.</i>	Hagerman Hall.
Holman, Harry Arthur	<i>Colorado Springs</i>	425 E. St. Vrain St.
Holloway, Florence Marie	<i>Colorado Springs.</i>	24 E. Dale St.
Hopkins, Hazel Maud	<i>Denver, Colo.</i>	Montgomery Hall.
Hopkins, Horace Herbert (E)	<i>Grand Junction, Colo.</i>	1106 N. Weber St.
Howard, Elmer Elbert	<i>Greeley, Colo.</i>	1130 N. Cascade Ave.
Howard, George Edward (B)	<i>S. Pasadena, Cal.</i>	Manitou, Colo.
Hubbell, Mary Livingston	<i>Colorado Springs.</i>	1915 Wood Ave.
Johnson, Ernest Amos (B)	<i>Ouray, Colo.</i>	1629 N. Tejon St.
Johnson, Harriet Huston	<i>Denver, Colo.</i>	McGregor Hall.
Keating, Kathrine	<i>Pueblo, Colo.</i>	Ticknor Hall.
Keener, George Herring	<i>Colorado Springs.</i>	426 E. Cache la Poudre
Kennon, Anne Byrd	<i>Denver, Colo.</i>	McGregor Hall.
King, Arthur Dale (B)	<i>Greeley, Colo.</i>	1125 N. Nevada Ave.
Kingman, Mary Helen	<i>Colorado Springs.</i>	530 N. Nevada Ave.
Kinnikin, Mathias Bond (E)	<i>Worden, Ill.</i>	1220 N. Custer St.
Kinsman, Mary Esther	<i>Colorado Springs.</i>	301 S. Cascade Ave.
Kipp, Corinne Ida	<i>Salt Lake City, Utah</i>	McGregor Hall.
Kittleman, Mary Elizabeth	<i>Colorado Springs.</i>	1419 N. Tejon St.
Koch, Dorothy L.	<i>Aspen, Colo.</i>	McGregor Hall.
Kurth, Alvin Norval (B)	<i>Colorado Springs.</i>	1216 N. Wahsatch Ave.
Landrum, Agnes Virginia	<i>Sterling, Colo.</i>	McGregor Hall.
Lawrence, Grace	<i>Colorado Springs.</i>	1709 Colorado Ave.
Leisy, Agnes (B)	<i>Montrose, Colo.</i>	Bemis Hall.
Lewis, Waldo McKinney (B)	<i>Delta, Colo.</i>	Hagerman Hall.
Loomis, Dorothy Crofts	<i>Denver, Colo.</i>	McGregor Hall.
Mackay, Anne Louise	<i>Denver, Colo.</i>	Ticknor Hall.
McDougall, John Allen	<i>Longmont, Colo.</i>	1629 N. Tejon St.
McIntosh, Margaret Effie	<i>Colorado Springs.</i>	840 E. Platte Ave.
McKnight, Martin Luther (E)	<i>Colorado City.</i>	112 Lincoln Ave.
McWhorter, Lucile	<i>Denver, Colo.</i>	McGregor Hall.
Madden, John Henry	<i>Denver, Colo.</i>	1319 N. Nevada Ave.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Magee, Annie Gretchen	<i>Alamosa, Colo.</i>	Montgomery Hall.
Marshall, John Stanley (E)	<i>Greeley, Colo.</i>	Hagerman Hall.
Martin, Gladys Marian	<i>Colorado Springs.</i>	1411 S. Tejon St.
Mason, Edith Parsons	<i>Colorado Springs.</i>	619 N. Prospect St.
Mendenhall, Marion Naomi	<i>Montrose, Colo.</i>	Montgomery Hall.
Miller, Hazel Elsie	<i>Cascade, Colo.</i>	Manitou, Colo.
Mimmack, William Edward	<i>Eaton, Colo.</i>	1125 N. Nevada Ave.
Mohrbacher, Florence	<i>Cripple Creek, Colo.</i>	519 N. Cedar St.
Moran, Mary Faye	<i>Shelbyville, Mo.</i>	823 N. Corona St.
Murray, Geraldine	<i>Cheyenne, Wyo.</i>	McGregor Hall.
Neuswanger, Chris Harold	<i>Greeley, Colo.</i>	1122 N. Cascade Ave.
Noyes, Richard Atherton	<i>S. Byfield, Mass.</i>	Hagerman Hall.
Oberndorfer, Beulah	<i>Colorado Springs.</i>	916 N. Weber St.
Offutt, Samuel Russell (E)	<i>Bloomfield, Ky.</i>	1211 N. Nevada Ave.
Palmer, Walter Lincoln	<i>Castle Rock, Colo.</i>	1106 N. Weber St.
Park, Harold Alexander (E)	<i>Longmont, Colo.</i>	Hagerman Hall.
Pattison, Lucile	<i>Colorado Springs.</i>	1714 N. Tejon St.
Paul, Jeanie Allyn	<i>Durango, Colo.</i>	205 W. Uintah St.
Pendergast, Mary Honora	<i>Colorado Springs.</i>	1210 N. Weber St.
Peterson, Harold Lester (B)	<i>Colorado Springs.</i>	828 S. Cascade Ave.
Pond, Harold Mears	<i>Colorado Springs.</i>	1207 Washington Ave.
Potter, Clarence Leo J	<i>Denver, Colo.</i>	911 N. Nevada Ave.
Prichard, George William	<i>Pratt, Kan.</i>	310 E. Dale St.
Rawlings, John William (B)	<i>Monte Vista, Colo.</i>	1122 N. Cascade Ave.
Reid, Lucy Gibbs	<i>Colorado Springs.</i>	505 N. Weber St.
Rice, Velman Taylor	<i>Pierce, Neb.</i>	9 E. Dale St.
Robbins, Howard Edwards	<i>Denver, Colo.</i>	1125 N. Nevada Ave.
Robinson, George Sidney	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Root, Viva Margaret	<i>Colorado Springs.</i>	Cor. Espanola Pros.
Schlessman, Gerald Lee (B)	<i>Colorado Springs.</i>	314 1st St., Nob Hill.
Schweiger, Carl Albert (B)	<i>Lafayette, Colo.</i>	1106 N. Weber St.
Shadowen, Carl Albert (B)	<i>Ft. Morgan, Colo.</i>	1106 N. Weber St.
Shelden, Frank Clifton (E)	<i>Colorado Springs.</i>	321 W. Kiowa St.
Sheppard, Percival Eugene	<i>Eaton, Colo.</i>	Hagerman Hall.
Sheppard, Paul Richard	<i>Eaton, Colo.</i>	Hagerman Hall.
Simpson, Vernon Elizabeth (B)	<i>Grand Junction, Colo.</i>	Montgomery Hall.
Sinden, Roger Hull (E)	<i>Cañon City, Colo.</i>	Hagerman Hall.
Skinner, Marian Louise	<i>Colorado Springs.</i>	1428 N. Nevada Ave.
Smith, Albert Herman (E)	<i>Longmont, Colo.</i>	218 E. Dale St.
Smythe, Donald DeCou (E)	<i>Colorado Springs.</i>	827 N. Corona St.
Speer, Katharine van der Veer	<i>Colorado Springs.</i>	19 E. San Miguel St.
Steele, Robert Borden	<i>Rocky Ford, Colo.</i>	1123 N. Weber St.
Stone, Geraldine	<i>Milan, Mo.</i>	McGregor Hall.
Strain, Frank Elven (B)	<i>Lamar, Colo.</i>	1122 N. Cascade Ave.
Stubenrauch, Marie Louise	<i>Colorado Springs.</i>	701 E. Columbia St.
Stukey, David Chapman (E)	<i>Steamboat Springs</i>	18 Boulder Crescent
Stukey, Lorna	<i>Steamboat Springs</i>	McGregor Hall.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Swart, Richard Houghton	<i>Denver, Colo.</i>	Hagerman Hall.
Tanner, James Frederick	<i>Denver, Colo.</i>	1122 N. Cascade Ave.
Taylor, Jean Katherine	<i>La Grange, Ill.</i>	107 S. Nevada Ave.
Thomas, Thornton Henry Jr.	<i>Ordway, Colo.</i>	1130 N. Nevada Ave.
Tohill, Lawrence Springer	<i>Monte Vista, Colo.</i>	1122 N. Cascade Ave.
Tucker, Hayse Robert (B)	<i>Colorado Springs.</i>	215 S. 12th St.
Vates, Robert William	<i>Pueblo, Colo.</i>	911 N. Nevada Ave.
Verner, Ogden E. (B)	<i>Denver, Colo.</i>	1106 N. Weber St.
Vorrath, Edna Hermina	<i>Colorado Springs.</i>	219 E. Fontanero St.
Walker, Frances Lucille	<i>Cañon City, Colo.</i>	Bemis Hall.
Watson, Elmo Scott	<i>Colfax, Ill.</i>	1106 N. Weber St.
Weber, Glenn (E)	<i>Colorado Springs.</i>	234 Franklin St.
Weston, Sylvia Gwendoline	<i>Colorado Springs.</i>	1112 E. Pikes Peak Ave.
White, Helen Phillips	<i>Colorado Springs.</i>	23 W. 2nd St.
Whyte, Lucile Janet	<i>Denver, Colo.</i>	McGregor Hall.
Wickham, Esther Lionne	<i>Denver, Colo.</i>	McGregor Hall.
Wilkin, Juliet	<i>Cañon City, Colo.</i>	Montgomery Hall.
Whitney, Leo John	<i>Cascade, Colo.</i>	1140 Wood Ave.
Williams, Donald F. (B)	<i>Lamar, Colo.</i>	1122 N. Cascade Ave.
Wills, Benjamin Grun	<i>Colorado City, Colo.</i>	2018 Armstrong Ave.

FRESHMEN.

Acker, Florence May	<i>Manitou, Colo.</i>	Manitou, Colo.
Alderson, Samuel Edwin	<i>Paonia, Colo.</i>	Plaza Hotel
Allen, Harold Franklin	<i>Grand Junction, Colo.</i>	Hagerman Hall.
Anderson, Newell Curren (B)	<i>Ft. Morgan, Colo.</i>	Hagerman Hall.
Armstrong, Annie Eliza	<i>Ft. Collins, Colo.</i>	Ticknor Hall.
Azpell, Dorothy Phillips	<i>Denver, Colo.</i>	Bemis Hall.
Barnard, Foster George	<i>Manitou, Colo.</i>	Manitou, Colo.
Barnett, Corinne McKenzie	<i>Denver, Colo.</i>	Ticknor, Hall.
Bartlett, Eleanor Este	<i>Colorado Springs.</i>	1103 Wood Ave.
Bartlett, Landell	<i>Colorado Springs.</i>	1103 Wood Ave.
Bell, Gladys Colette	<i>Greeley, Colo.</i>	Bemis Hall.
Bellamy, Mary Marguerite	<i>Knoxville, Ia.</i>	Bemis Hall.
Bendure, Gladys Berta	<i>Durango, Colo.</i>	Bemis Hall.
Bendure, Hazel Valentine	<i>Durango, Colo.</i>	Bemis Hall.
Bentley, Ruth Embree	<i>Denver, Colo.</i>	Bemis Hall.
Bickmore, Thankful	<i>Denver, Colo.</i>	Bemis Hall.
Biddle, Roy Elmer	<i>Ft. Morgan, Colo.</i>	
Biebush, Frederick Calvin	<i>Greeley, Colo.</i>	1206 N. Cascade Ave.
Blair, Ruford	<i>Colorado City, Colo.</i>	122 Jefferson Ave.
Blaurock, Ottilie Frederike	<i>Denver, Colo.</i>	Montgomery Hall.
Bode, Gladys Louise	<i>Salida, Colo.</i>	McGregor Hall.
Bourquin, Anna	<i>Aspen, Colo.</i>	Bemis Hall.
Bowers, Zerua Rosalie	<i>Crowley, Colo.</i>	McGregor Hall.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Bowman, John Drummond (E)	<i>Alton, Ill.</i>	1210 Wood Ave.
Bresnahan, Winifred Cecilia	<i>Cheyenne, Wyo.</i>	Bemis Hall.
Brumfield, Roy Jennings (E)	<i>Silverton, Colo.</i>	409 N. Tejon St.
Buck, Vera Helen	<i>Stockton, Kans.</i>	Montgomery Hall.
Burdette, Elliott William (B)	<i>Del Norte, Colo.</i>	
Burgess, Leroy Thornton	<i>Colorado Springs.</i>	730 N. Nevada Ave.
Burritt, Norman Auston (E)	<i>Ft. Morgan, Colo.</i>	923 N. Weber St.
Bush, Marguerite Orril	<i>Boise, Idaho</i>	Bemis Hall.
Butts, Ethel May	<i>Georgetown, Colo.</i>	Bemis Hall.
Cain, Daniel Kavanaugh	<i>St. Edward, Neb.</i>	1715 W. Huerfano St.
*Callahan, Paul Eugene (E)	<i>Colorado City, Colo.</i>	210 S. 18th St.
Callis, Eleanor Western	<i>Denver, Colo.</i>	Bemis Hall.
Cameron, Francis Fuller (B)	<i>Denver, Colo.</i>	
Carley, Meda Faith	<i>Cheyenne, Wyo.</i>	Bemis Hall.
Carnahan, Helen Charlotte	<i>Fruita, Colo.</i>	Ticknor Hall.
Carroll, Wilbur Kempthorne	<i>Manitou, Colo.</i>	Manitou, Colo.
Carson, Chester Warner	<i>Evanston, Ill.</i>	1414 N. Nevada Ave.
Castle, George Royce (E)	<i>Delta, Colo.</i>	Hagerman Hall.
Chambers, Rhoda Edna	<i>Pueblo, Colo.</i>	Montgomery Hall.
Cheese, Clarence Harden	<i>Peyton, Colo.</i>	1303 N. Wahsatch Ave
Cheese, Marjorie Alice	<i>Peyton, Colo.</i>	1303 N. Wahsatch Ave
Cheves, Emily Antrey	<i>Villa Rica, Ga.</i>	704 N. Tejon St.
Chiles, Marcellus Holmes	<i>Denver, Colo.</i>	1032 N. Weber St.
Choate, George Francis (E)	<i>Denver, Colo.</i>	1129 N. Nevada Ave.
Clark, William Keith	<i>Denver, Colo.</i>	1125 N. Nevada Ave.
Clemans, Maria Jeannette	<i>Colorado Springs.</i>	17 E. Dale St.
Clough, Richard Hudson	<i>Colorado Springs.</i>	623 N. Tejon St.
Cole, Opal Crow	<i>Ft. Morgan, Colo.</i>	715 N. Nevada Ave.
Cooley, Florence Estelle	<i>Colorado Springs.</i>	1629 N. Corona St.
Cooper, Floyd Edward (E)	<i>Silverton, Colo.</i>	409 N. Tejon St.
Copeland, William Duncan	<i>Denver, Colo.</i>	Manitou, Colo.
Copeland, Jay Milton	<i>Denver, Colo.</i>	Manitou, Colo.
Coulter, Joseph Ross	<i>Greeley, Colo.</i>	1339 N. Nevada Ave.
Criswell, Robert Wesley (B)	<i>Paonia, Colo.</i>	1119 N. Weber St.
Crockett, Charles Thompson	<i>Pueblo, Colo.</i>	Hagerman Hall.
Crockett, Elizabeth Irving	<i>Pueblo, Colo.</i>	Bemis Hall.
Cuaz, Ernest Alfred	<i>Paonia, Colo.</i>	1119 N. Weber St.
Davis, Donald Watson (E)	<i>Colorado Springs.</i>	21 E. Caramillo St.
Davis, Marjorie Lucretia Anna	<i>Colorado Springs.</i>	21 E. Caramillo St.
Davis, Mildred Martha	<i>Pueblo, Colo.</i>	Bemis Hall.
Dickson, Morris Loudon	<i>Steamboat Springs.</i>	1629 N. Tejon St.
Ditmar, Carl Conrad	<i>Colorado Springs.</i>	219 E. St. Vrain St.
Doane, George Herbert (B)	<i>Cheyenne, Wyo.</i>	1122 N. Cascade Ave.
Dobashi, George Nagaharu	<i>Kai, Japan.</i>	
Dodge, Alma Estella	<i>Granada, Colo.</i>	Montgomery Hall.

*Deceased.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Dunham, Agnes	<i>Colorado Springs.</i>	520 E. Uintah St.
Dunnell, William Wanton (E)	<i>Providence, R. I.</i>	1215 N. Nevada Ave.
Duvall, Edwin Mather	<i>Colorado Springs.</i>	223 E. Yampa St.
Eakin, Helene Smith	<i>Sapulpa, Okla.</i>	Montgomery Hall.
Ellis, Mabel Blanche	<i>Denver, Colo.</i>	Bemis Hall.
Emery, Francis Little	<i>Denver, Colo.</i>	Y. M. C. A.
Evans, Corwin D.	<i>Bellevue, Ohio</i>	
Evans, Elisabeth Nesmith	<i>Denver, Colo.</i>	McGregor Hall.
Farnsworth, Alice Winslow	<i>Colorado Springs.</i>	531 N. Cascade Ave.
Fertig, Margaret	<i>Colorado Springs.</i>	1508 N. Weber St.
Flegal, Walter Jennings	<i>Clearfield, Pa.</i>	1629 N. Tejon St.
Flint, Pattie Hitchings	<i>Denver, Colo.</i>	Ticknor Hall.
Flynn, Edmund Clarence (E)	<i>Colorado Springs.</i>	518 N. Cascade Ave.
Folger, Orlando Rutledge (E)	<i>Easley, S. C.</i>	717 S. Tejon St.
Foulk, Theodore Marlowe (E)	<i>Denver, Colo.</i>	1520 N. Nevada Ave.
Frisbey, Helen	<i>Trinidad, Colo.</i>	Bemis Hall.
Fuller, Ralph Hall	<i>Ogden, Utah.</i>	220 N. Cascade Ave.
Gambrel, Harry Maurice (B)	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Gambrill, Cyrus (E)	<i>Colorado Springs.</i>	126 E. Platte Ave.
Garlett, Frank Creslen	<i>Cheyenne, Wyo.</i>	Hagerman Hall.
Garvey, Edgar William (E)	<i>Colorado Springs.</i>	126 N. Spruce St.
Gibbs, Lowell Bliss	<i>Monte Vista, Colo.</i>	1629 N. Tejon St.
Gibson, Gertrude Grace	<i>Flagler, Colo.</i>	Montgomery Hall.
Gildersleeve, Rosemary	<i>Denver, Colo.</i>	Montgomery Hall.
Gilmore, Alice	<i>Colorado Springs.</i>	1219 Colorado Ave.
Gleason, Gertrude Marian	<i>Austin, Minn.</i>	McGregor Hall.
Gooding, Carlos Clay Van (B)	<i>Steamboat Springs.</i>	Hagerman Hall.
Grafton, Gladys	<i>Colorado Springs.</i>	1207 N. Custer St.
Graham, Donald Bourne (B)	<i>Colorado Springs.</i>	Gladstone Apts.
Gray, Lee Roy	<i>Colorado Springs.</i>	Broadmoor.
Green, Annie Cliffe	<i>Council Bluffs, Ia.</i>	Bemis Hall.
Greer, Bertie Lester (E)	<i>Calhan, Colo.</i>	306 N. Cascade Ave.
Gregg, Leah Jones	<i>Colorado Springs</i>	1223 N. Tejon St.
Grimes, Gladys May	<i>Denver, Colo.</i>	Ticknor Hall.
Hammond, Mildred Leapha	<i>Grand Junction, Colo.</i>	Montgomery Hall.
Harper, Helene	<i>Pueblo, Colo.</i>	Bemis Hall.
Harrington, Rose Elizabeth	<i>Colorado Springs.</i>	309 Cheyenne Rd.
Harris, Merial Theo	<i>Grand Junction, Colo.</i>	Bemis Hall.
Hart, Chester Eugene	<i>Colorado Springs.</i>	308 E. Monument St.
Hartenstein, Helen Louise	<i>Buena Vista, Colo.</i>	Montgomery Hall.
Hartman, Alice Isabel	<i>Olathe, Colo.</i>	Ticknor Hall.
Hathaway, Robert Sherman	<i>Denver, Colo.</i>	1123 N. Weber St.
Helm, Alfred Benjamin (B)	<i>Ft. Collins, Colo.</i>	24 College Place.
Henderson, Russell Stewart (E)	<i>Durango, Colo.</i>	409 N. Tejon St.
Hepplewhite, James Gladstone	<i>Cañon City, Colo.</i>	Hagerman Hall.
Hetherington, Duncan Charteris	<i>Colorado Springs.</i>	218 E. Columbia St.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Hickman, Feryl Frances	<i>Colorado Springs.</i>	1328 N. Weber St.
Higbee, Daniel Riggs	<i>Fowler, Colo.</i>	1629 N. Tejon St.
Higgins, Nellie	<i>Pueblo, Colo.</i>	Ticknor Hall.
Hoag, Dorothy Moore	<i>Pueblo, Colo.</i>	Bemis Hall.
Holloway, Edith	<i>Dallas, Texas.</i>	Bemis Hall.
Holt, Thaddeus Goode	<i>Denver, Colo.</i>	817 N. Weber St.
Hoover, Clara Helen	<i>Denver, Colo.</i>	Bemis Hall.
Hughes, Edward William	<i>Elizabeth, Colo.</i>	9 E. Dale St.
Hughes, Walter Richard	<i>Elizabeth, Colo.</i>	9 E. Dale St.
Hung-Woo, Mary Janet	<i>Denver, Colo.</i>	Bemis Hall.
Hunt, Ralph Van Nice (E)	<i>Denver, Colo.</i>	Hagerman Hall.
Jeanne, Nellie May	<i>Colorado Springs.</i>	301 Cheyenne Blvd.
Johnson, Alan Hawley (E)	<i>Denver, Colo.</i>	Hagerman Hall.
Jones, Marguerite Amelia	<i>Cripple Creek, Colo.</i>	Bemis Hall.
Kapelke, Paul Franz	<i>Colorado Springs.</i>	818 E. High St.
Keating, Martha	<i>Pueblo, Colo.</i>	Ticknor Hall.
Kelly, William Andrew	<i>Colorado Springs.</i>	2327 N. Nevada Ave.
Kinney, Edmund Lindsey (E)	<i>Colorado Springs.</i>	1423 N. Tejon St.
Kirby, William Dean	<i>Ault, Colo.</i>	1123 N. Weber St.
Klingensmith, Lucile Elsie	<i>Hotchkiss, Colo.</i>	519 E. Cache la Poudre
Kuver, Helen Anna	<i>Trinidad, Colo.</i>	Ticknor Hall.
Kyffin, Frank Idwell (B)	<i>Denver, Colo.</i>	Hagerman Hall.
Landmesser, Marie Rose	<i>Colorado Springs.</i>	637 E. Boulder St.
Larkin, Edalyn Myrtle	<i>Raton, N. M.</i>	Bemis Hall.
Larsh, Eleanor Louise	<i>Cheyenne, Wyo.</i>	Bemis Hall.
Larsen, Lloyd Carlton (B)	<i>La Junta, Colo.</i>	1319 N. Nevada Ave.
Law, Edward Freeman	<i>Colorado Springs.</i>	816 N. Weber St.
Law, Nelle	<i>Colorado Springs.</i>	816 N. Weber St.
Leighton, Florence Mae	<i>Colorado Springs.</i>	428 N. Nevada Ave.
Lendrum, Alexander Martin	<i>Colorado Springs.</i>	1018 N. Weber St.
Leshner, David Barnes (B)	<i>Golden, Colo.</i>	409 N. Tejon St.
Ling, Philip Edmund (E)	<i>Eaton, Colo.</i>	1122 N. Cascade Ave.
Lodwick, Paul Newton (B)	<i>Greeley, Colo.</i>	1230 N. Tejon St.
Logan, Howard Byron (E)	<i>Colorado Springs.</i>	316 N. Institute St.
Loud, William Brewster	<i>Colorado Springs.</i>	1203 N. Tejon St.
Lowell, Jean Stuart	<i>Sedalia, Colo.</i>	Montgomery Hall.
McBride, Robert Steel	<i>Denver, Colo.</i>	Hagerman Hall.
McClain, James William Jr.	<i>Manzanola, Colo.</i>	Hagerman Hall.
McClelland, Sybil	<i>Colorado Springs.</i>	Ticknor Hall.
McCoy, Orlando Zeben (B)	<i>Colorado Springs.</i>	521 S. Tejon St.
McDowell, Frederick Warren	<i>Manitou, Colo.</i>	Manitou, Colo.
MacFarlane, Mildred Cary	<i>Victor, Colo.</i>	252 Cache la Poudre.
McHatton, Stanley	<i>Gypsum, Colo.</i>	1314 N. Weber St.
McKendry, Leon Davis	<i>Archer, Neb.</i>	
McKinney, Marguerite Alice	<i>Colorado Springs.</i>	423 N. Franklin St.
McKlveen, Marguerite	<i>Denver, Colo.</i>	McGregor Hall.
McLaughlin, Romain Edward	<i>Florissant, Colo.</i>	Hagerman Hall.

NAME.	HOME ADDRESS.	CITY ADDRESS.
McLean, Katharine	<i>Denver, Colo.</i>	Ticknor Hall.
McMillan, Neil Taylor	<i>Denver, Colo.</i>	1122 N. Cascade Ave.
McNutt, DeWitt Dean (B)	<i>Denver, Colo.</i>	529 N. Nevada Ave.
Mace, Olin Eugene (E)	<i>Grand Junction, Colo.</i>	Hagerman Hall.
Mack, Charles Everet	<i>Colorado Springs.</i>	931 N. Corona St.
Manning, Ethel Mary	<i>Colorado Springs.</i>	Montgomery Hall.
Marston, Marion Rowland	<i>Kirksville, Mo.</i>	712 N. Tejon St.
Martin, Doris Elizabeth	<i>Salt Lake City, Utah</i>	McGregor Hall.
Mathis, Irene Edna	<i>Colorado Springs.</i>	814 E. Monument St.
Mayfield, Gladys	<i>Granada, Colo.</i>	Ticknor Hall.
Maxwell, William Floyd	<i>Colorado Springs.</i>	1517 N. Weber St.
Merchant, William Bluford	<i>Paonia, Colo.</i>	428 E. Dale St.
Metcalf, Marjorie	<i>Denver, Colo.</i>	Bemis Hall.
Meyer, Felicia	<i>Colorado Springs.</i>	1606 Cheyenne Road
Morris, Robert Watts	<i>Colorado Springs.</i>	2119 N. Nevada Ave.
Morrow, Florence Marie	<i>Colorado Springs.</i>	Broadmoor, Colo.
Moulton, Ellen Irene	<i>Pueblo, Colo.</i>	Ticknor Hall.
Mosgrove, Helen Elizabeth	<i>Salida, Colo.</i>	McGregor Hall.
Musgrove, Arthur F. (B)	<i>Denver, Colo.</i>	1125 N. Nevada Ave.
Myers, Doris Musa	<i>Aurora, Neb.</i>	Bemis Hall.
Nelson, Agnes Ure Gillespie	<i>Denver, Colo.</i>	Bemis Hall.
Newton, George E.	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Nichols, Madge Irene	<i>Cañon City, Colo.</i>	510 E. Uintah St.
Niccoli, Michael Charles (B)	<i>Hastings, Colo.</i>	530 N. Nevada Ave.
Nierman, Alberta Emma	<i>Manitou, Colo.</i>	Manitou, Colo.
Nimmo, Mary Ellen	<i>Cheyenne, Wyo.</i>	McGregor Hall.
Norris, Valeda Gertrude	<i>La Salle, Colo.</i>	Bemis Hall.
O'Hara, Michael James (E)	<i>Denver, Colo.</i>	1122 N. Cascade Ave.
Osborn, Oiven Lloyd	<i>Paonia, Colo.</i>	Plaza Hotel.
Osborne, Melvin Homer (E)	<i>Denver, Colo.</i>	418 E. Cucharras St.
Owens, Marvin Stuart (E)	<i>Denver, Colo.</i>	Y. M. C. A.
Palmer, Blanche Marguerite	<i>Sterling, Colo.</i>	Ticknor Hall.
Palmer, Russell Elwood (E)	<i>Steamboat Springs.</i>	817 N. Tejon St.
Parker, Fanny Fern	<i>Colorado Springs.</i>	11 W. 2nd St.
Paul, Sophie Allen	<i>Durango, Colo.</i>	205 W. Uintah St.
Pearce, Glenn Lawrence (B)	<i>Caldwell, Kan.</i>	228 E. Pikes Peak Ave
Pendergast, Emily Marie	<i>Colorado Springs.</i>	1210 N. Weber St.
Perkins, Flora Dunreath	<i>Salida, Colo.</i>	McGregor Hall.
Perkins, Mac Dudley (E)	<i>Denver, Colo.</i>	Hagerman Hall.
Pick, Gladys Amelia	<i>Colorado Springs.</i>	914 Cheyenne Road.
Pickard, Edith Alta	<i>Longmont, Colo.</i>	Bemis Hall.
Pirie, Alice May	<i>Ft. Collins, Colo.</i>	Montgomery Hall.
Polk, Warren McCain	<i>Council Bluffs, Ia.</i>	409 N. Tejon St.
Pound, Vera Helen	<i>Chama, N. M.</i>	Ticknor Hall.
Prior, Frank Hart	<i>Colorado Springs.</i>	720 N. Tejon St.
Putnam, Arthur Lorraine (E)	<i>Cheyenne, Wyo.</i>	Hagerman Hall.
Radtke, Leroy Arthur (E)	<i>Beaver Dam, Wis.</i>	Hagerman Hall.
Randall, Mary	<i>Colorado Springs.</i>	1812 N. Nevada Ave.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Reid, Margaret	<i>Colorado Springs.</i>	505 N. Weber St.
Rich, Mollie Irene	<i>Gobleville, Mich.</i>	312 W. Prospect Ave.
Richmond, William Edwin (E)	<i>Colorado Springs.</i>	1628 Washington Ave.
Riner, Mary Elizabeth	<i>Cheyenne, Wyo.</i>	McGregor Hall.
Ritterskamp, Gertrude	<i>Freelandville, Ind.</i>	329 E. Cache la Poudre.
Rockwell, Helen Lenore	<i>Denver, Colo.</i>	Bemis Hall.
Sabin, Gerould Avery (E)	<i>Denver, Colo.</i>	Y. M. C. A.
Sachs, Dorothy Claude	<i>Denver, Colo.</i>	Bemis Hall.
Samuelson, Paul Raymond	<i>Las Animas, Colo.</i>	17 N. Weber St.
Schaffer, Scott Philip	<i>Atchison, Kan.</i>	501 N. Weber St.
Scheib, Howard Joseph (B)	<i>Denver, Colo.</i>	Hagerman Hall.
Schiesswohl, Chris Jacob	<i>Grand Junction, Colo.</i>	527 N. Tejon St.
Schmitt, Celestine Fredericka	<i>Colorado Springs.</i>	1336 N. Weber St.
Seitzinger, Edith Viola	<i>Colorado Springs.</i>	301 Mesa Road.
Shaffer, William Luman (E)	<i>Greeley, Colo.</i>	1129 N. Nevada Ave.
Sheldon, Frank Hobbs (E)	<i>Colorado Springs</i>	122 S. 16th St.
Sheldon, Willard Benjamin	<i>Colorado Springs.</i>	122 S. 16th St.
Sims, Irene Neill	<i>Monte Vista, Colo.</i>	Montgomery Hall.
Smith, Alice Evelyn	<i>Denver, Colo.</i>	McGregor Hall
Smith, Franklin Campbell Jr.	<i>Durango, Colo.</i>	Hagerman Hall.
Smith, William Wilbur	<i>San Francisco, Cal.</i>	706 E. Platte Ave.
Sopris, Albert Elbridge	<i>Denver, Colo.</i>	1032 N. Weber St.
Spangler, Raymond Leslie	<i>Longmont, Colo.</i>	218 E. Dale St.
Spencer, Dwight	<i>Colorado Springs.</i>	2015 N. Tejon St.
Spingler, Christine Albertina	<i>Colorado Springs.</i>	1120 N. Tejon St.
Sprague, Rachel Adah	<i>Denver, Colo.</i>	Bemis Hall.
Staley, Hazel	<i>Springfield, Mo.</i>	2024 N. Nevada Ave.
Steuerwald, Robert Charles	<i>Longmont, Colo.</i>	1629 N. Tejon St.
Strehlke, George Louis	<i>Montrose, Colo.</i>	Hagerman Hall.
Strong, James Henry (E)	<i>Greeley, Colo.</i>	1129 N. Nevada Ave.
Sundquist, Lulu Mildred	<i>Alamosa, Colo.</i>	Bemis Hall.
Swart, Ellen Orinda	<i>Denver, Colo.</i>	Bemis Hall.
Sweeney, Robert Emerson Jr.	<i>Colorado Springs.</i>	924 W. Cimarron St.
Tate, Virginia	<i>Pueblo, Colo.</i>	725 N. Cascade Ave.
Taylor, Reuben Davis (E)	<i>Texarkana, Texas.</i>	Y. M. C. A.
Thomas, Harold Houston (B)	<i>Colorado Springs.</i>	122 E. Washington.
Thompson, Gladys Atlanta	<i>Manitou, Colo.</i>	McGregor Hall.
Thomas, William Ernest	<i>Colorado Springs.</i>	1215 N. Corona St.
Thompson, Ralph Fleming (B)	<i>Cañon City, Colo.</i>	Hagerman Hall.
Thompson, Thomas S.	<i>Colorado Springs.</i>	831 N. Chestnut St.
Thoms, Arthur Clarence	<i>Denver, Colo.</i>	Y. M. C. A.
Thoron, Louise	<i>Colorado Springs.</i>	1435 N. Cascade Ave.
Thrall, Frances Evalyn	<i>Colorado Springs.</i>	122 E. Uintah St.
Titsworth, Mary Elizabeth	<i>Colorado Springs.</i>	626 N. Franklin St.
Wallace, Gladys Anne	<i>Denver, Colo.</i>	McGregor Hall.
Walter, Thelma Minnie	<i>Silverton, Colo.</i>	Bemis Hall.
Warren, Edward DeWitt (B)	<i>Fruita, Colo.</i>	Y. M. C. A.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Weldie, Ralph Edson (B)	<i>Colorado Springs.</i>	1006 N. Wahsatch Ave
Whitaker, Byron Oliver	<i>Chickasha, Okla.</i>	
White, Adrian Dunbaugh	<i>Denver, Colo.</i>	1129 N. Nevada Ave.
White, Jack Farrington	<i>Jackson, Tenn.</i>	115 Tyler Place.
White, Laura Almira	<i>Denver, Colo.</i>	Bemis Hall.
Whiting, Anne Thorburn	<i>Goldfield, Colo.</i>	Bemis Hall.
Wilcox, Mary Helen	<i>Hotchkiss, Colo.</i>	422 E. Cache la Poudre
Williams, Carroll Mortimer (E)	<i>Longmont, Colo.</i>	111 E. Dale St.
Williams, Maud Bennett	<i>Longmont, Colo.</i>	McGregor Hall.
Willis, Robert Mills	<i>Cripple Creek, Colo.</i>	1629 N. Tejon St.
Wilson, Frank Bigger	<i>Montrose, Colo.</i>	Hagerman Hall.
Winter, Sidney Graham	<i>Ogden, Utah.</i>	529 N. Nevada Ave.
Wolfe, Fred Morris	<i>Colorado City, Colo.</i>	513 Lincoln Ave.
Wood, Charles Earle (E)	<i>Cripple Creek, Colo.</i>	1331 N. Nevada Ave.
Wood, William Lyon	<i>Montrose, Colo.</i>	Hagerman Hall.
Young, Leman Conrad (E)	<i>Gorin, Mo.</i>	1617 Alamo Ave.
Zimmeht, John Albert (E)	<i>Colorado City, Colo.</i>	1833 Washington Av.

SPECIALS AND REGISTERED VISITORS.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Allen, Hope	<i>Colorado Springs.</i>	Broadmoor,
Anderson, Helen	<i>Colorado Springs.</i>	Broadmoor,
Anderson, Nettie	<i>Colorado Springs.</i>	1111 E. Cimarron St.
Armit, Berthe	<i>Colorado Springs.</i>	1314 N. Weber St.
Arnold, Mrs. Mabel Stark	<i>Colorado Springs.</i>	423 N. Wahsatch Ave.
Avery, Melanie	<i>Farmington, Conn.</i>	9 E. Cache la Poudre S
Black, Mary Margretta	<i>Ft. Morgan, Colo.</i>	Ticknor Hall.
Bowman, Mrs. E. M.	<i>Alton, Ill.</i>	1210 Wood Ave.
Breder, Marie Elizabeth	<i>Colorado Springs.</i>	1705 N. Nevada Ave.
Brigham, Mrs. Arthur G.	<i>Colorado Springs.</i>	20 W. Del Norte St.
Buchanan, Louise Pauline	<i>Salem, Ind.</i>	505 N. Weber St.
Carlisle, K. L.	<i>Colorado Springs.</i>	1415 Wood Ave.
Chamberlain, Paul Frank	<i>Colorado Springs.</i>	2016 N. Cascade Ave.
Clarahan, Mary M.	<i>Colorado Springs.</i>	1709 N. Tejon St.
Coffin, Mrs. Louise D.	<i>Colorado Springs.</i>	620 E. Columbia St.
Dakens, Robert Arnold	<i>Colorado Springs.</i>	312 S. Weber St.
Danforth, Mary Louise	<i>Colorado Springs.</i>	1130 Wood Ave.
Davis, Edna	<i>Colorado Springs.</i>	321 N. Weber St.
Davis, Ruth	<i>Colorado Springs.</i>	321 N. Weber St.
Davis, William Mack (B)	<i>Monte Vista, Colo.</i>	Hagerman Hall.
Day, Mary	<i>Boulder, Colo.</i>	Y. W. C. A.
Dickey, Nana B.	<i>Colorado Springs.</i>	319 N. Weber St.
Fischer, Claribel Ben Hur	<i>Santa Fe, N. M.</i>	Bemis Hall.
Fisher, Lucille Eleanor	<i>Colorado Springs.</i>	1316 N. Nevada Ave.
Gallagher, John Francis	<i>Colorado Springs.</i>	Glockner Sanatorium.
Gildea, Mrs. P. F.	<i>Colorado Springs.</i>	2220 N. Cascade Ave.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Gray, Natalie H.	<i>Colorado Springs.</i>	715 N. Cascade Ave.
Green, Kenneth	<i>Los Angeles, Cal.</i>	125 E. Vermijo St.
Groe, Josephine	<i>Lake Mills, Ia.</i>	221 E. Columbia St.
Hemming, Mrs. Mary W.	<i>Colorado Springs.</i>	1815 Wood Ave.
Hoagland, Mrs. Henry W.	<i>Colorado Springs.</i>	808 N. Nevada Ave.
Huleatt, Elmer K.	<i>Loveland, Colo.</i>	Hagerman Hall.
Jackson, Helen	<i>Colorado Springs.</i>	228 E. Kiowa St.
Johnson, Rev. Narriel J.	<i>Colorado Springs.</i>	425 N. Royer St.
Jones, Lucy Dunbar	<i>Colorado Springs.</i>	625 N. Cascade Ave.
Joslin, Rev. Morten	<i>Colorado Springs.</i>	530 E. Platte Ave.
Kenna, Mary Dudley	<i>Colorado Springs.</i>	Broadmoor.
Kissel, Charlotte Stimson	<i>Colorado Springs.</i>	1110 N. Tejon St.
Krause, Mrs. George	<i>Colorado Springs.</i>	1421 Wood Ave.
Lee, Mrs. I. F.	<i>Colorado Springs.</i>	Ivywild.
Leonard, Major Henry	<i>Colorado Springs.</i>	1435 N. Cascade Ave.
Lippincott, Camilla	<i>Colorado Springs.</i>	Broadmoor.
Lippincott, Priscilla	<i>Colorado Springs.</i>	Broadmoor.
McClellan, Laura Lucile	<i>Elizabeth, Colo.</i>	McGregor Hall.
McCoy, Linda	<i>Colorado Springs.</i>	521 S. Tejon St.
McFarlane, Albert Charles	<i>Victor, Colo.</i>	25 E. Cache la Poudre.
Mahoney, Dr. Joseph John	<i>Colorado Springs.</i>	2024 N. Cascade Ave.
Mayer, Mrs. Mabel B.	<i>Colorado Springs.</i>	402 E. San Rafael St.
Neuer, Agnes Louise	<i>Colorado Springs.</i>	505 Cheyenne Rd.
O'Brien, Mrs. William	<i>Colorado Springs.</i>	Antlers Hotel.
Ogilbee, Jean McDonough	<i>Manitou, Colo.</i>	Manitou, Colo.
Oldfield, Mary Masilda	<i>Colorado Springs.</i>	415 S. Nevada Ave.
Paine, Myrtes Adele	<i>Colorado Springs.</i>	1129 N. Nevada Ave.
Parsons, Esther	<i>Colorado Springs.</i>	1130 Wood Ave.
Peirson, Jessie Lena	<i>Colorado Springs.</i>	206 E. Dale St.
Penrose, Mrs. Spencer	<i>Colorado Springs.</i>	30 W. Dale St.
Perfect, Josephine Holt	<i>Brooklyn, N. Y.</i>	Manitou, Colo.
Raney, Mrs. T. M.	<i>Colorado Springs.</i>	1720 Wood Ave.
Rowton, V. Everton	<i>Colorado Springs.</i>	1128 Washington Ave.
Schimpeler, Mrs. Daisy P.	<i>Colorado Springs.</i>	1327 N. Nevada Ave.
Scholz, Jeannette	<i>Colorado Springs.</i>	1507 N. Nevada Ave.
Siegling, Ludwig O.	<i>Oberpöhlitz, Germany</i>	Y. M. C. A.
Stubbs, Maurice G.	<i>La Junta, Colo.</i>	1122 N. Cascade Ave.
Thomson, Annie Lou	<i>St. Louis, Mo.</i>	1414 N. Nevada Ave.
Tolley, Alice	<i>Colorado Springs</i>	304 E. 2nd St.
Walker, Phyllis Gail	<i>Colorado Springs.</i>	1208 Colorado Ave.
Warnock, Janet	<i>Loveland, Colo.</i>	McGregor Hall.
Woods, Dorothy Lillian	<i>Colorado Springs.</i>	1806 N. Cascade Ave.
Zimmerman, Mrs. Marie	<i>Colorado Springs.</i>	1503 N. Nevada Ave.

DEPARTMENT OF MUSIC

NAME.	HOME ADDRESS.	CITY ADDRESS.
Barnett, Corinne MacKenzie	<i>Denver.</i>	Ticknor Hall.
Bennett, Alberta Elizabeth	<i>Manitou.</i>	Manitou.
Bock, Adolph	<i>St. Joseph, Mo.</i>	1207 Washington Ave.
Black, Mary Margretta	<i>Fort Morgan.</i>	Bemis Hall.
Blaurock, Otilie Frederika	<i>Denver, Colo.</i>	Montgomery Hall.
Carley, Meda Faith	<i>Cheyenne, Wyo.</i>	Bemis Hall.
Cole, Opal Crow	<i>Fort Morgan.</i>	729 N. Weber St.
Criswell, Walter Hudson	<i>Paonia</i>	1119 N. Weber St.
Cowan, Jessie Augusta	<i>Brewster.</i>	1317 Washington Ave.
Cunningham,		
Margaret Josephine	<i>Corona, Ala.</i>	16 E. Columbia St.
Coakley, Arthur	<i>Colorado Springs.</i>	427 E. Kiowa St.
Day, Mary	<i>Boulder.</i>	Y. W. C. A.
Dean, Iva Annie	<i>Colorado Springs.</i>	529 N. Weber St.
Deane, Ruth	<i>Colorado Springs.</i>	719 N. Pine St.
Dunlavy, Eva	<i>Denver.</i>	McGregor Hall.
Dunn, Mary Olive	<i>Colorado Springs.</i>	
Fischer, Claribel Ben Hur	<i>Santa Fe, N. M.</i>	Bemis Hall.
Flint, Myrtle Edyth	<i>Colorado Springs.</i>	503 S. Nevada Ave.
Garrison, Mary	<i>Manitou.</i>	Manitou.
Gibson, Gertrude Grace	<i>Flagler.</i>	Montgomery Hall.
Griswold, Beryl	<i>Colorado Springs.</i>	915 N. Weber St.
Groe, Josephine	<i>Lake Mills, Ia.</i>	221 E. Columbia St.
Hale, Helen Bartlett	<i>Colorado Springs.</i>	1424 N. Nevada Ave.
Hale, Donald Emerson	<i>Colorado Springs.</i>	1424 N. Nevada Ave.
Hunter, Lela Marie	<i>Colorado Springs.</i>	412 E. Yampa St.
Hamilton, Sara Grace	<i>Colorado Springs.</i>	315 E. Willamette St.
Hamilton, Josephine Margaret	<i>Colorado Springs.</i>	315 E. Willamette St.
Hancock, Mrs. Mary Josephine	<i>Colorado Springs.</i>	114 St. Vrain Court
Hartenstein, Helen Louise	<i>Buena Vista.</i>	Montgomery Hall.
Hopkins, Hazel	<i>Denver.</i>	Montgomery Hall.
Johnson, Harriet Huston	<i>Denver.</i>	McGregor Hall.
Kennedy, Margaret	<i>Colorado City.</i>	19 N. Thirteenth St.
Kuver, Helen Anna	<i>Trinidad.</i>	Ticknor Hall.
Kennedy, Nellie	<i>Colorado City.</i>	Colorado City.
Larsh, Eleanore Louise	<i>Cheyenne, Wyo.</i>	Bemis Hall.
Koch, Dorothy	<i>Aspen.</i>	McGregor Hall.
Leslie, Myrtle	<i>Colorado Springs.</i>	423 W. Bijou St.
MacConnell, Esther	<i>Colorado Springs.</i>	N. Pine St.
Mathis, Irene Edna	<i>Colorado Springs.</i>	814 E. Monument St.
McClellan, Laura Lucile	<i>Elizabeth.</i>	McGregor Hall.
Miller, Laura Ethel	<i>Colorado Springs.</i>	1335 N. Royer St.
Nichols, Ruth	<i>Colorado Springs.</i>	1424 N. Nevada Ave.
Parsons, Edward Smith Jr.	<i>Colorado Springs.</i>	1130 Wood Ave.
Pendergast, Nell	<i>Colorado Springs.</i>	1210 N. Weber St.
Pond, Harold Mears	<i>Colorado Springs.</i>	1207 Washington Ave.
Reinhart, Josephine Margaret	<i>Fountain.</i>	Fountain

NAME.	HOME ADDRESS.	CITY ADDRESS.
Robinson, Leila Adelaide	<i>Colorado Springs.</i>	320 E. Kiowa St.
Rockwell, Helen Lenore	<i>Denver.</i>	Bemis Hall.
Rice, Velman Taylor	<i>Flagler.</i>	9 E. Dale St.
Root, Viva Margaret	<i>Colorado Springs.</i>	N. Prospect St.
Skinner, Marion Louise	<i>Colorado Springs.</i>	1428 N. Nevada Ave
Smith, Alice Evelyn	<i>Denver.</i>	McGregor Hall.
Stelson, Julia Catherine	<i>Colorado Springs.</i>	321 E. Monument St.
Thoms, Arthur Clarence	<i>Colorado Springs.</i>	409 N. Tejon St.
Thompson, Gladys Atlanta	<i>Manitou.</i>	McGregor Hall.
Thrall, Laura Ernestine	<i>Colorado Springs.</i>	122 E. Uintah St.
Wade, Grace	<i>Colorado Springs.</i>	315 E. Yampa St.
Walker, Phyllis Gail	<i>Colorado Springs.</i>	1208 Colorado Ave.
Warnock, Janet Zilpah	<i>Loveland.</i>	McGregor Hall.
White, Adrian Dunbaugh	<i>Denver.</i>	1129 N. Nevada Ave.
White, Helen Phillips	<i>Ivywild.</i>	23 W. Second St.
Wood, William Lyon	<i>Montrose.</i>	The Plaza.
Young, Mrs.	<i>Colorado Springs.</i>	Cheyenne Cañon.

SUMMARY.

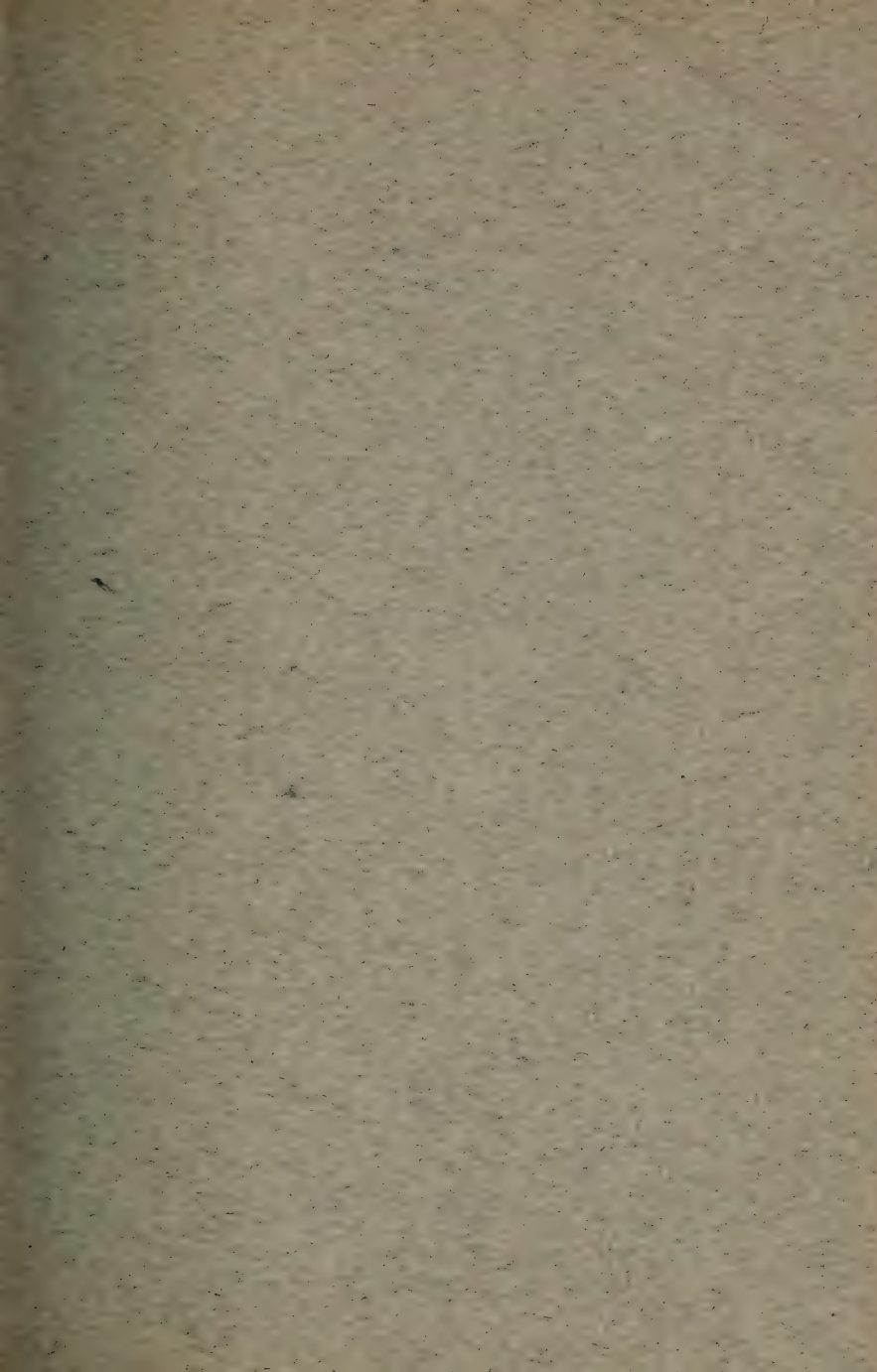
Graduate Students.....	6
Seniors	80
Juniors	85
Sophomores	165
Freshmen	273
Specials and Visitors.....	69
Undergraduates	672
Total	678
School of Music.....	63
	741
Names Counted Twice	35
Grand Total.....	706

Index

Page	Page
Accredited Schools.....	29
Administration, Officers of.....	11
Admission by Certificate.....	28
Admission to Advanced Standing...	30
Admission, Requirements for—	
In Departments of Arts and Sciences, and Business Administration and Banking.....	21
In Departments of Engineering and Forestry.....	22
In Department of Music.....	108
Advanced Degrees.....	45
Alumni Association.....	142
Art and Music, Major in.....	114
Art Collections.....	120
Art, Courses in.....	49
Astronomy—	
Courses in.....	50
Observatory and Meteorological Station	133
Bachelor of Arts Degree.....	31
Bachelor of Arts in Business Administration and Banking, Degree of.....	34
Bachelor of Science in Civil and Irrigation Engineering, Degree of.....	37
Bachelor of Science in Electrical Engineering, Degree of.....	40
Bequest, Forms of.....	149
Biblical Literature and Applied Religion, Courses in.....	51
Biology—	
Courses in.....	53
Entrance Requirements in.....	28
Laboratories	121
Board of Control of the Library...	12
Buildings, College.....	116
Business Administration and Banking, Courses in.....	57
Calendar	5
Chemistry—	
Courses in.....	59
Entrance Requirements in.....	28
Laboratories	122
Civil and Irrigation Engineering—	
Courses in.....	62
Laboratories	127
Civil Engineer and Electrical Engineer, Degrees of.....	46
Class Officers.....	20
College Buildings.....	116
College Lecture Course.....	141
College, Organization of.....	7
College Publication.....	140
Commencement, 1915.....	150-152
Committees of the Faculty.....	19
Committees of the Trustees.....	10
Courses of Instruction.....	49-107
Art	49
Astronomy	50
Biblical Literature and Applied Religion	51
Biology	53
Business Administration and Banking	57
Chemistry	59
Civil and Irrigation Engineering..	62
Economics and Sociology.....	68
Education	70
Electrical Engineering.....	72
English	75
Forestry	79
Geology	82
German	83
Graphics	85
Greek	87
History	88
Latin	89
Mathematics	90
Music	91
Philosophy	92
Physical Education.....	95
Physics	98
Political Science.....	101
Public Speaking.....	102
Romance Languages.....	102
Shop Work.....	106
Teachers, Courses for.....	107

	Page		Page
Degrees, Authority to Confer.....	8	Geology—	
Degrees Conferred in 1915.....	151-152	Courses in.....	82
Degrees, Requirements for—		Entrance Requirements in.....	28
Advanced	45	Laboratories	123
Bachelor of Arts.....	31-34	German—	
Bachelor of Arts in Business Ad- ministration and Banking....	34	Courses in.....	83
Bachelor of Science in Civil and Irrigation Engineering.....	37	Entrance Requirements in.....	26
Bachelor of Science in Electrical Engineering	40	Graduate Students.....	153
Civil Engineer and Electrical En- gineer	46	Graphics, Courses in.....	85
Forest Engineer.....	43	Greek—	
General Rules.....	31	Courses in.....	87
Master of Arts.....	45	Entrance Requirements in.....	26
Master of Forestry.....	47	Harvard Exchange.....	47
Department of Music—		Historical Statement.....	6
Admission	108	History—	
Courses of Study.....	108	Courses in.....	88
Equipment	114	Entrance Requirements in.....	25
Faculty	108	Honors, 1915.....	150
Major in Art and Music.....	114	Hospital Fund.....	147
Students in.....	168	Illustrative Apparatus and Material.	129
Tuition	115	Instruction, Courses of; see Courses of Instruction.	
Economics and Sociology, Courses in	68	Italian; see Romance Languages.	
Education, Courses in.....	70	Laboratories and Apparatus—	
Electives for Bachelor of Arts.....	34	Biology	121
Electrical Engineering—		Chemistry	122
Courses in.....	72	Civil Engineering.....	127
Laboratories	130	Electrical Engineering.....	130
Engineers' Club.....	138	Geology	123
English—		Illustrative Apparatus and Ma- terial	129
Courses in.....	75	Manitou Forest-Field Laboratory in Forestry.....	132
Entrance Requirements in.....	23	Observatory and Meteorological Station	133
Entrance Requirements; see Re- quirements for Admission.		Physics	124
Expenses	142	Psychology	124
Faculty	13	Shops	125
Faculty in Department of Music....	108	Surveying-Summer School.....	128
Faculty, Committees of.....	19	Latin—	
Forest Engineer, Degree of.....	43	Courses in.....	89
Foresters' Club.....	139	Entrance Requirements in.....	26
Forestry—		Lecture Course, College.....	141
Courses in.....	79	Library	119
Manitou Forest-Field Laboratory in Forestry.....	132	Library, Board of Control of.....	12
Forms of Bequest.....	149	Literary Societies.....	138
French; see Romance Languages.		Location of College.....	116
General Information.....	116	Major in Art and Music.....	114
General Rules for Degrees.....	31	Major Subject for Bachelor of Arts.	33
		Manitou Forest—a Field Laboratory in Forestry.....	132

	Page		Page
Master of Arts, Degree of.....	45	Requirements for Degrees; see De-	
Master of Forestry, Degree of.....	47	grees, Requirements for	
Mathematics—		Romance Languages—	
Courses in.....	90	Courses in.....	102
Entrance Requirements in.....	25	Entrance Requirements in.....	26
Museum	133	Scholarships	144
Music, Courses in.....	91	Scholarships awarded, 1915.....	150
Music, Department of; see Depart-		Shop Work—	
ment of Music.		Courses in.....	106
Needs of College.....	147	Shops	125
Observatory and Meteorological		Spanish; see Romance Languages.	
Station	133	Special Students.....	30
Officers of Administration.....	11	Student Commission of Colorado Col-	
Oratorical and Debating Contests..	140	lege, The.....	139
Organization of the College.....	7	Student Publications.....	138
Phi Beta Kappa.....	140	Students, Register of—	
Phi Beta Kappa Elections, 1915....	150	Graduate Students.....	153
Philosophy, Courses in.....	92	Seniors	153
Physical Education, Courses in.....	95	Juniors	155
Physics—		Sophomores	156
Courses in.....	98	Freshmen	160
Entrance Requirements in.....	27	Specials and Registered Visitors..	166
Laboratories	124	Department of Music.....	168
Political Science, Courses in.....	101	Summary	169
Prizes	146	Summary of Students.....	169
Public Speaking, Courses in.....	102	Surveying—Summer School.....	128
Publication, College.....	140	Teachers, Courses for.....	107
Publications, Student.....	138	Trustees	9
Registration	21	Trustees, Committees of.....	10
Religious Life.....	136	Tuition	142
Requirements for Admission—		Tuition in Music.....	115
In Departments of Arts and Sci-		Undergraduates	153-156
ences, and Business Adminis-		Unit Courses Required for Admis-	
tration and Banking.....	21	sion	23
In Departments of Engineering		Woman's Educational Society.....	146
and Forestry.....	22		
In Department of Music.....	108		



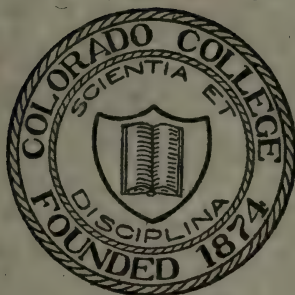


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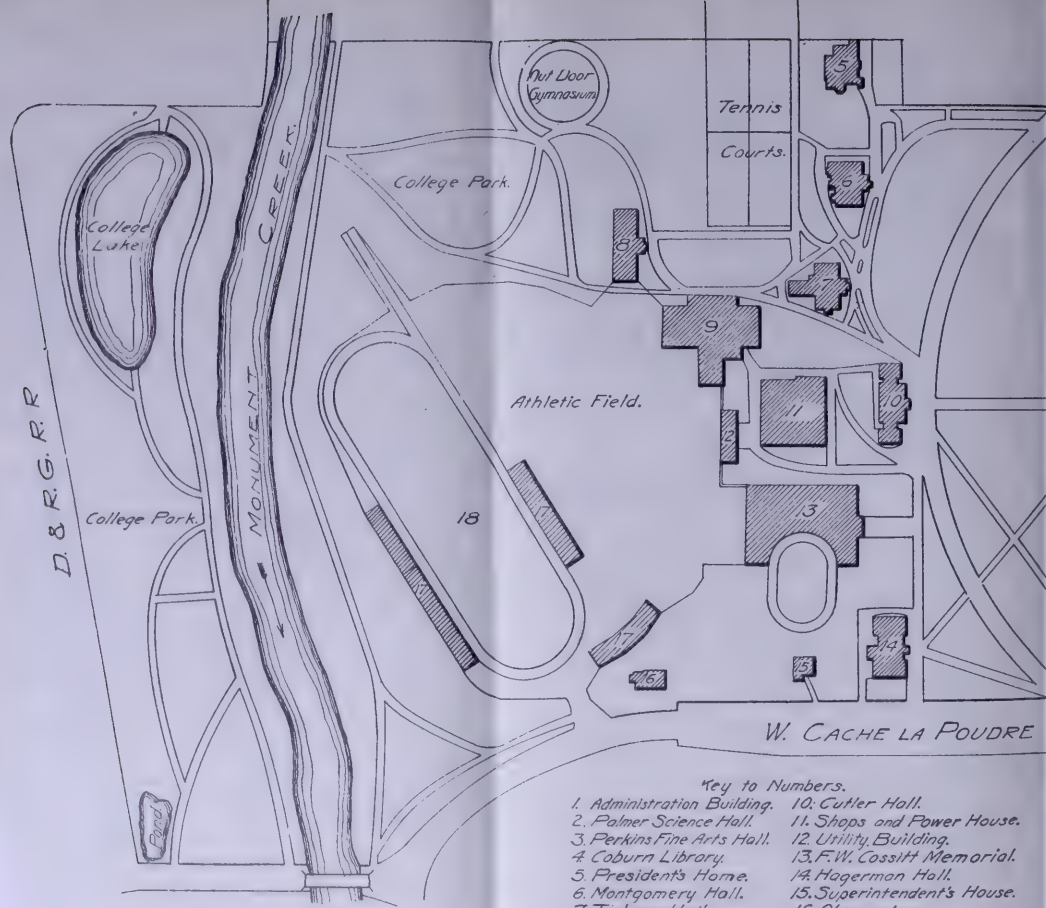
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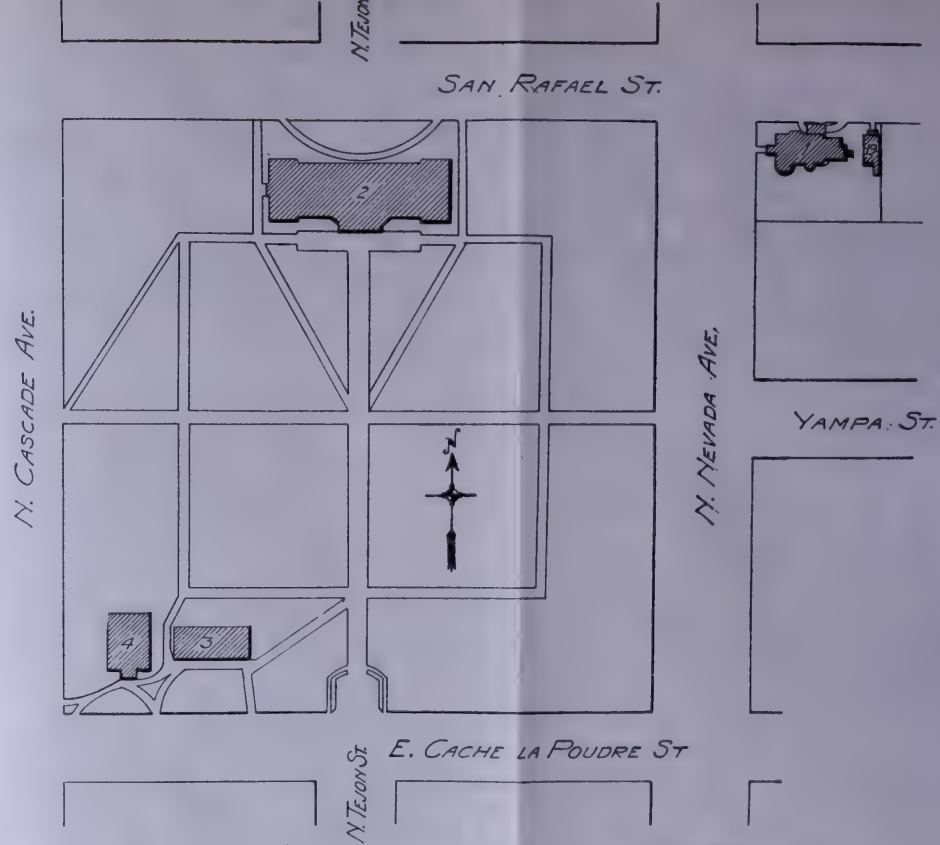
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- Key to Numbers.
- | | |
|-----------------------------|------------------------------|
| 1. Administration Building. | 10. Cutler Hall. |
| 2. Palmer Science Hall. | 11. Shops and Power House. |
| 3. Perkins Fine Arts Hall. | 12. Utility Building. |
| 4. Coburn Library. | 13. F. W. Cossitt Memorial. |
| 5. President's Home. | 14. Hagerman Hall. |
| 6. Montgomery Hall. | 15. Superintendent's House. |
| 7. Ticknor Hall. | 16. Observatory. |
| 8. McGregor Hall. | 17. Grand Stands. |
| 9. Bemis Hall. | 18. Washburn Athletic Field. |
| 19. Garage. | |



MAP
OF THE
COLORADO COLLEGE
CAMPUS.

COLORADO COLLEGE PUBLICATION

Bulletin Series No. 49

General Series No. 90

FORTY-THIRD
ANNUAL CATALOGUE
of
Colorado College



1916-1917
COLORADO SPRINGS
COLORADO

826

Contents

	PAGE
Calendar	5
Historical Statement	6
Organization of the College	7
Trustees	9
Standing Committees of the Trustees	10
Officers of Administration	11
Faculty	12
Committees of the Faculty	20
Class Officers	21
Admission—	
Registration	22
Entrance Requirements—	
For Courses leading to the Degrees of Bachelor of Arts, and Bachelor of Arts in Business Administration and Banking	22
For Courses leading to the Degrees of Bachelor of Science * in Engineering and Forest Engineer	23
Unit Courses	24
Admission by Certificate	28
Accredited Schools	29
Admission to Advanced Standing	30
Special Students	30
Requirements for Degrees—	
General Rules	31
Degree of Bachelor of Arts	31
Required Subjects	31
Requirements Arranged by Years	32
Major Subjects	33
Electives	33
Degree of Bachelor of Arts in Business Administration and Banking	34
Degree of Bachelor of Science in Civil and Irrigation En- gineering	36
Degree of Bachelor of Science in Electrical Engineering	39
Degree of Forest Engineer	41
Advanced Degrees	43
Degree of Master of Arts	43
Degrees of Civil Engineer and Electrical Engineer	44
The Harvard Exchange	45

Courses of Instruction—	PAGE
Art.....	46
Astronomy.....	47
Biblical Literature and Applied Religion.....	47
Biology.....	49
Business Administration and Banking.....	53
Chemistry.....	55
Civil and Irrigation Engineering.....	58
Economics and Sociology.....	63
Education.....	65
Electrical Engineering.....	66
English.....	69
Forestry.....	72
Geology.....	75
German.....	76
Graphics.....	77
Greek.....	79
History.....	80
Latin.....	82
Mathematics.....	83
Music.....	84
Philosophy.....	84
Physical Education.....	86
Physics.....	88
Political Science.....	89
Public Speaking.....	90
Romance Languages.....	91
Shop Work.....	94
Teachers, Courses for.....	95
Department of Music—	
Faculty.....	96
Admission.....	97
Courses of Study.....	97
Major in Art and Music.....	100
Equipment.....	100
Tuition.....	100
General Information—	
Location.....	102
College Buildings.....	102
Library.....	105
Art Collections.....	106
Academy of Fine Arts.....	106

Laboratories and Apparatus—	PAGE
Biology.....	107
Chemistry.....	108
Geology.....	108
Physics.....	108
Psychology.....	109
Shops.....	109
Civil Engineering Laboratories.....	110
Surveying—Summer School.....	111
Illustrative Apparatus and Material.....	111
Electrical Engineering Laboratories.....	112
The Manitou Forest—a Field Laboratory in Forestry...	112
Observatory and Meteorological Station.....	113
Museum.....	113
Religious Life.....	116
Student Publications.....	118
Literary Societies.....	118
Foresters' Club.....	118
The Student Commission of Colorado College.....	118
Oratorical and Debating Contests.....	119
Phi Beta Kappa.....	119
College Publication.....	119
Public Lectures and Readings.....	120
Alumni Association.....	120
Expenses.....	120
Scholarships.....	122
Woman's Educational Society.....	124
Hospital Fund.....	125
Needs of College.....	125
Forms of Bequest.....	127
Award of Honors and Scholarships; Phi Beta Kappa Elections, 1916	128
Degrees Conferred in 1916.....	129
Students—	
Graduate Students.....	131
Undergraduates.....	131-146
Specials and Registered Visitors.....	146-148
Department of Music.....	148-149
Summary.....	150

Calendar

1917

Jan.	9—CHRISTMAS RECESS ENDS at 8:00 a. m.	Tuesday
Jan.	19—Mid-Year Examinations begin	Friday
Jan.	26—Trustees' Day	Friday
Jan.	29—SECOND HALF-YEAR BEGINS at 8:00 a. m.	Monday
Feb.	22—Washington's Birthday: a holiday	Thursday
Feb.	25—Day of Prayer for Colleges	Sunday
Mar.	10—Condition Examinations begin at 8:00 a. m.	Saturday
Mar.	20—Last day for registering for Hawley and Mary G. Slocum scholarships	Tuesday
Mar.	31—SPRING RECESS BEGINS at 1 p. m.	Saturday
Apr.	10—SPRING RECESS ENDS at 8 a. m.	Tuesday
May	30—Memorial Day: a holiday	Wednesday
June	1—Examinations begin	Friday
June	4—Summer School of Surveying opens in Manitou Park	Monday
June	10—Baccalaureate Sermon	Sunday
June	11—Class Day	Monday
June	12—Annual Meeting of Board of Trustees	Tuesday
June	13—COMMENCEMENT	Wednesday
Sept.	11—Registration	Tuesday
Sept.	11—Residence Halls open	Tuesday
Sept.	12—FIRST HALF-YEAR BEGINS at 8:00 a. m.	Wednesday
Sept.	15—Condition Examinations for Engineers, 8 a. m.	Saturday
Sept.	22—Condition Examinations begin at 8 a. m.	Saturday
Oct.	12—Last day for registering for post-graduate work	Friday
Oct.	19—Insignia Day	Friday
Nov.	28—Thanksgiving Recess begins at 5 p. m.	Wednesday
Dec.	3—Thanksgiving Recess ends at 8 a. m.	Monday
Dec.	21—CHRISTMAS RECESS BEGINS at 5 p. m.	Friday

1918

Jan.	8—CHRISTMAS RECESS ENDS at 8 a. m.	Tuesday
Jan.	18—Mid-Year Examinations begin	Friday
Jan.	25—Trustees' Day	Friday
Jan.	28—SECOND HALF-YEAR BEGINS at 8 a. m.	Monday
Feb.	22—Washington's Birthday: a holiday	Friday
Feb.	23—Condition Examinations begin at 8 a. m.	Saturday
Feb.	24—Day of Prayer for Colleges	Sunday
Mar.	19—Last day for registering for Hawley and Mary G. Slocum scholarships	Tuesday
Mar.	28—SPRING RECESS BEGINS at 1 p. m.	Thursday
Apr.	9—SPRING RECESS ENDS at 8 a. m.	Tuesday
May	30—Memorial Day: a holiday	Thursday
May	31—Examinations begin	Friday
June	3—Summer School of Surveying opens in Manitou Park	Monday
June	9—Baccalaureate Sermon	Sunday
June	10—Class Day	Monday
June	11—Annual Meeting of Board of Trustees	Tuesday
June	12—COMMENCEMENT	Wednesday

Historical Statement.

Colorado College is the oldest institution of higher education in the State. In 1874, while Colorado was yet a territory, a College upon a broad Christian foundation was established in Colorado Springs. A grant of land had been made in advance of the organization of the College in 1873 by the Colorado Springs Company, the founders of the City of Colorado Springs. The Congregational denomination, so famous for building colleges, gave, in the first years of the struggle, warm sanction and helpful guidance. With devotion and a spirit of true piety, they joined in the up-building of the College. Trustees were elected, a charter was secured, and the Rev. Jonathan Edwards became the first professor and executive officer. The authorized announcement for that year contains the following:

"It is the purpose of the Trustees to build a College in which liberal studies may be pursued under positive Christian influences. . . . The College is under no ecclesiastical or political control. Members of different churches are on its Board of Trustees. . . . The character which is most desired for this college is that of thorough scholarship and fervent piety, each assisting the other, and neither ever offered as a compensation for the defects of the other."

From the beginning, the Board of Trustees has been composed of leading professional and business men of Colorado, together with a few Eastern men of similar standing, and has ever been animated by the purpose avowed by the original Board.

The first President, the Rev. James Dougherty, was elected in 1875, and was succeeded in the following year by the Rev. E. P. Tenney. From 1885 to 1888 there was no President, but the work of teaching was carried on without interruption. At this time there was only one building on the campus, now known as Cutler Hall, erected in 1880.

In 1888 William Frederick Slocum was elected President. The faculty was at once enlarged, the courses reorganized, and Cutler Academy* incorporated as an associate preparatory school, in which students have since been trained, not only for Colorado College, but for all the leading institutions of the United States. A residence for the President was purchased. Hagerman Hall was built in 1889. In the same year the Woman's Educational Society was organized and built Montgomery Hall.

* Discontinued in June, 1914; Cutler Hall is now used for Engineering courses.

The following buildings have been erected since that time: The N. P. Coburn Library, 1894; the Henry R. Wolcott Observatory, 1894; Ticknor Hall, 1897; Perkins Fine Arts Hall, 1900; McGregor Hall, 1903; Palmer Hall, 1903; Bemis Hall, 1908; Cossitt Memorial, 1914; and the Administration Building, a gift acquired in the summer of 1914. The President's residence was remodeled and enlarged in 1903.

In 1903 a Department of Engineering, with Dr. Florian Cajori as Dean, was opened to meet the increasing demand in the Rocky Mountain region for instruction in applied science. The first class was graduated in 1906.

Through the generosity of General William J. Palmer and Dr. W. A. Bell, who in 1905 presented to the College a tract of 10,000 acres of timber land called Manitou Park, the foundation was laid for a Department of Forestry. This work began in 1906, with Dr. William C. Sturgis as Dean.

A Department of Business Administration and Banking with Dr. Warren M. Persons as Dean was established in 1914 with the special income of \$6,000 a year. The work offered is designed to meet the needs of students preparing for business, banking, foreign exchange, journalism, consular service, and secretarial work.

ORGANIZATION OF THE COLLEGE.

Colorado College was incorporated under the general provisions of Section 5, Article 2, of Chapter 18 of the Revised Statutes of the Territory of Colorado. The Charter, dated February 4, 1874, and filed with the Recorder of El Paso County, Colorado, on February 17, 1874, includes the following articles: "FIRST. The corporate name of said corporation shall be The Colorado College. SECOND. The object of this corporation is to locate and maintain at Colorado Springs under Christian auspices an institution of learning on the college or university plan. THIRD. The number of trustees of said corporation shall be not less than twelve nor more than eighteen. . . . FOURTH. The existence of the said corporation, The Colorado College, is intended to be perpetual."

By a Certificate of Amendment dated June 13, 1907, and filed June 15, 1907 (in the manner prescribed by Chapter 139 of the Session Laws of 1907), to the above articles were added: "FIFTH. Seven of the said trustees present at any meeting shall constitute a quorum, and the Board of Trustees shall have power by vote of a quorum to fill vacancies

in the Board. SIXTH. The said corporation shall never be under the control of a sect; no trustee, officer, member of any faculty, or student shall ever be required to belong to any specified sect and no theological test shall ever be imposed or applied as a condition of entrance in said College or of connection therewith."

The College is authorized to confer degrees by Section 1 of an Act of March 28, 1889 (Session Laws of 1889, p. 121), which states that, "Any corporation, now or hereafter existing for educational purposes, under the laws of this State, which shall maintain one or more institutions of learning of the grade of a university or college, shall have authority by its directors or board of trustees or by such person or persons, as may be designated by its constitution or by-laws, to confer such degrees and grant such diplomas and other marks of distinction as are usually conferred and granted by other universities and colleges of like grade."

Trustees

WILLIAM F. SLOCUM, *Ex-officio President of the Board* . . . 24 College Place

Term expires 1917

GEORGE W. BAILEY 309 McPhee Building, Denver

MAHLON D. THATCHER First National Bank, Pueblo

WILLIAM M. VANCE 1332 Wood Ave.

Term expires 1918

JOHN CAMPBELL 1401 Gilpin St., Denver

CHARLES M. MACNEILL 301 Mining Exchange Building

FRANK TRUMBULL 71 Broadway, New York

Term expires 1919

*WILLIAM S. JACKSON 228 E. Kiowa St.

WILLIAM LENNOX 1001 N. Nevada Ave.

HENRY C. McALLISTER, JR. 1880 Gaylord St., Denver

Term expires 1920

WILLIS R. ARMSTRONG 1420 Culebra Ave.

GEORGE A. FOWLER Broadmoor

PHILIP B. STEWART 1228 Wood Ave.

Term expires 1921

JUDSON M. BEMIS 506 N. Cascade Ave.

IRVING W. BONBRIGHT 14 Wall St., New York

Term expires 1922

IRVING HOWBERT 17 N. Weber St.

GEORGE FOSTER PEABODY Lake George, New York

E. P. SHOVE 1329 Wood Ave.

*Resigned.

Standing Committees of the Trustees

EXECUTIVE.

P. B. STEWART, *Chairman*; GEORGE W. BAILEY, IRVING W. BONBRIGHT, IRVING HOWBERT, GEORGE FOSTER PEABODY.

FINANCE.

E. P. SHOVE, *Chairman*; WILLIAM LENNOX, *Vice-Chairman*; J. M. BEMIS, GEORGE A. FOWLER, IRVING HOWBERT, CHARLES M. MACNEILL, PHILIP B. STEWART, MAHLON D. THATCHER, FRANK TRUMBULL, WILLIAM M. VANCE.

FORESTRY SCHOOL

WILLIAM LENNOX, *Chairman*; IRVING W. BONBRIGHT, GEORGE A. FOWLER, PHILIP B. STEWART.

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PHILIP B. STEWART, *Chairman*; HENRY MCALLISTER, JR., WILLIS R. ARMSTRONG, WILLIAM M. VANCE.

INSTRUCTION.

JOHN CAMPBELL, *Chairman*; WILLIS R. ARMSTRONG, GEORGE W. BAILEY, IRVING HOWBERT.

AUDITING.

IRVING HOWBERT, *Chairman*; J. M. BEMIS.

INVESTMENTS.

IRVING HOWBERT, *Chairman*; WILLIAM LENNOX, *Vice-Chairman*; J. M. BEMIS, E. P. SHOVE, W. M. VANCE.

The President of the Board is ex-officio member of all committees.

Officers of Administration

WILLIAM FREDERICK SLOCUM, *President.*

FLORIAN CAJORI, *Chairman,*

JOHN CARL PARISH,

EDWARD CHRISTIAN SCHNEIDER,

} *Faculty Executive Committee.**

ROGER HENWOOD MOTTEN, *Secretary of the College.*

WILLIAM WALLACE POSTLETHWAITE, *Treasurer.*

HARRIETT ARSULA SATER, *Cashier.*

BENNETT & HALL, *Attorneys for the College.* *

Secretaries

Secretary to the Faculty Executive Committee, Florence Ethel Dickens

Secretary to the Dean of the Department of Arts and Science, Mrs.
Josie Rambo Morrow.

Secretary to the Dean of Women, Frances Bennoch Plummer.

*In charge of the academic affairs of the College.

Faculty

WILLIAM FREDERICK SLOCUM, D.D., LL.D. 24 College Place
President and Head Professor of Philosophy.

A.B. (Amherst) '74; B.D. (Andover) '78; LL.D. (Amherst) '93;
LL.D. (Nebraska) '94; D.D. (Beloit) '01; LL.D. (Illinois Col-
lege) '04; LL.D. (Harvard) '12; LL.D. (Allegheny and University
of Colorado) '15; Colorado College, '88.

GUY HARRY ALBRIGHT, A.M. 1523 N. Tejon St.
Professor of Mathematics and Astronomy.

Ph.B. (Michigan) '99; A.B. (Harvard) '00; A.M. (ibid.) '13; Colorado
College, '07.

JOSEPH VALENTINE BREITWIESER, Ph.D. 322 E. San Miguel St.
Professor of Philosophy and Education.

A.B. (Indiana University) '07; A.M. (ibid.) '08; Ph.D. (Columbia)
'10; Colorado College, '10.

MARIANNA BROWN, A.M. McGregor Hall
Registrar.

A.B. (Earlham College) '76; A.M. (Cornell) '94; Colorado College, '02.

FLORIAN CAJORI, Ph.D., LL.D., Sc.D. 1119 Wood Ave.
*Dean of the Department of Engineering and
Head Professor of Mathematics.*

S.B. (Wisconsin) '83; M.S. (ibid.) '86; Ph.D. (Tulane) '94; LL.D.
(University of Colorado) '12; LL.D. (Colorado College) '13; Sc.D.
(Wisconsin) '13; Colorado College, '89.

DAVID FALES, JR., A.M., B.D. El Paso Club
Professor of Biblical Literature and Applied Religion.

A.B. (Harvard) '97; A.M. (Harvard) '99; B.D. (Chicago Theological
Seminary) '02; Colorado College, '15.

*ELIJAH CLARENCE HILLS, Ph.D., Litt.D. 12 College Place
Head Professor of Romance Languages and Literatures.

A.B. (Cornell) '92; Ph.D. (University of Colorado) '06; Litt.D.
(Rollins College) '06; Colorado College, '02.

GEORGE MAXWELL HOWE, Ph.D. 1811 N. Nevada Ave.
Head Professor of the German Language and Literature.

A.B. (Indiana) '94; Ph.D. (Cornell) '01; Colorado College, '07.

*Absent during the year 1916-17.

- RUTH LOOMIS, A.B. Bemis Hall
Dean of Women.
 A.B. (Vassar) '85; Colorado College, '96.
- FRANK HERBERT LOUD, PH.D. 1203 N. Tejon St.
Professor of Mathematics and Astronomy, Emeritus.
 A.B. (Amherst) '73; A.M. (Harvard) '99; Ph.D. (Haverford) '00;
 Colorado College, '77.
- CHARLES CHRISTOPHER MIEROW, PH.D. 216 E. Espanola St.
Professor of Classical Language and Literature.
 A.B. (Princeton) '05; A.M. (ibid.) '06; PH.D. (ibid.) '08; Colorado
 College, '16.
- ROGER HENWOOD MOTTEN, A.M. 7 Pelham Place
Professor of English and Secretary of the College.
 A.B. (Allegheny) '01; A.M. (ibid.) '15; Colorado College, '09.
- ATHERTON NOYES, A.M. 1205 Wood Ave.
Professor of English.
 A.B. (Yale) '85; A.M. (Harvard) '16; Colorado College, '92.
- MANLY DAYTON ORMES, A.B., B.D. 1623 N. Tejon St.
Librarian.
 A.B. (Yale) '85; B.D. (ibid.) '89; Colorado College, '04.
- JOHN CARL PARISH, PH.D. 224 E. Yampa St.
Professor of History.
 M.Dr. (Iowa State Teachers' College) '02; PH.B. (State University of
 Iowa) '05; A.M. (ibid.) '06; PH.D. (ibid.) '08; Colorado College, '14.
- EDWARD SMITH PARSONS, A.M., B.D., L.H.D. 1130 Wood Ave.
Dean of the Department of Arts and Sciences, and Bemis Head
Professor of English.
 A.B. (Amherst) '83; A.M. (ibid.) '86; B.D. (Yale) '87; L.H.D. (Am-
 herst) '03; Colorado College, '92.
- *WARREN MILTON PERSONS, PH.D. 123 Tyler Place
Dean of the Department of Business Administration and Banking, and
Professor of Economics and Finance.
 B.S. (Wisconsin) '99; PH.D. (Wisconsin) '15; Colorado College, '12.

*Absent during the year 1916-'17.

- MARIE A. SAHM, A.M. 114 E. Uintah St.
Professor of the History of Art and Classical Archaeology
 A.B. (Colorado College) '07; A.M. (ibid.) '08; Colorado College, '07.
- EDWARD CHRISTIAN SCHNEIDER, PH.D., Sc.D. 218 E. Uintah St.
Head Professor of Biology.
 B.S. (Tabor) '97; Ph.D. (Yale) '01; Sc.D. (Denver University) '14;
 Colorado College, '03.
- WILLIAM STRIEBY, A.M., E.M., Sc.D. 805 N. Cascade Ave.
Head Professor of Chemistry and Metallurgy.
 A.B. (New York) '75; E.M. (Columbia School of Mines) '78; A.M.
 (ibid.) '79; Sc.D. (Colorado College) '13; Colorado College, '80.
- ELWOOD IDELL TERRY, S.B. 1503 N. Nevada Ave.
Director of the Department of Forestry, and Professor of Forestry.
 S.B. (Harvard) '07; Colorado College, '11.
- GEORGE BRINTON THOMAS, M.E. IN E.E. 205 W. Uintah St.
Professor of Electrical Engineering.
 M.E. in E.E. (Ohio State) '07; Colorado College, '10.
- ROLAND RAY TILESTON, A.M. 319 E. Columbia St.
Professor of Physics.
 A.B. (Dartmouth) '07; A.M. (ibid.) '11; Colorado College, '13.
- EDWARD ROYAL WARREN, S.B. 20 W. Caramillo St.
Director of the Museum.
 S.B. (Massachusetts Institute of Technology) '81; Colorado College, '09.
- HOMER EDWARDS WOODBRIDGE, A.M. 115 E. Del Norte St.
Professor of English.
 A.B. (Williams) '02; A.M. (Harvard) '04; Colorado College, '06.
- SOLOMON BLUM, PH.D. 1824 N. Nevada Ave.
Assistant Professor of Economics.
 A.B. (Johns Hopkins) '03; Ph.D. (ibid.) '07; Colorado College, '14.
- †WYLIE BLOUNT MILLER JAMESON, A.B. 1506 N. Tejon St.
Assistant Professor of Romance Languages.
 A.B. (Colorado College) '10; Certificat d'Etudes Françaises (University
 of Lausanne) '12; Colorado College, '16.

†Absent during the second semester.

- *HOWARD MOORE, C.E. 1140 Wood Ave.
Assistant Professor of Graphics.
C.E. (Princeton) '93; Colorado College, '03.
- FRANK MORRIS OKEY, B.C.E. 1315 N. Weber St.
Assistant Professor of Civil Engineering.
B.C.E. (Iowa State College) '04; Colorado College, '14.
- AMBROSE PARÉ WINSTON, Ph. D., 432 N. Nevada Ave.
Assistant Professor of Economics.
A. B. (Wisconsin) '87; Ph. D. (Cornell) '00; Colorado College, '17.
- HORACE BURRINGTON BAKER, B.S. Administration Bldg.
Instructor in Biology.
B.S. (Michigan) '10; Colorado College, '13.
- FLORENCE MARIE BARRETT, M.A. McGregor Hall
Instructor in Romance Languages.
Ph.B. (University of Chicago) '14; M.A. (ibid.) '15; Colorado College, '17.
- ALFRED ATWATER BLACKMAN, M.D. 19 E. Cache la Poudre St.
Medical Adviser.
M.D. (Denver University) '02; Colorado College, '04.
- EVA TOLMAN CANON, A.B. Bemis Hall
Assistant Librarian.
A.B. (Colorado College) '04; Colorado College, '08.
- *GUY WENDELL CLARK, A.M. 318 E. St. Vrain St.
Instructor in Chemistry.
A.B. (Colorado College) '12; A.M. (ibid.) '14; Colorado College, '12.
- ELEANOR SOUTHGATE DAVIS Montgomery Hall
Instructor in Physical Education for Women.
Graduate (Boston Normal School of Gymnastics) '07; Colorado College, '14.
- MARIE ELISABETH DEUTSCHBEIN, 1514 N. Weber St.
Cataloguer in the Library.
Colorado College, '16.

*Absent during year 1916-'17.

ALBERT RUSSELL ELLINGWOOD, B.C.L. 1514 N. Weber St.
Instructor in Political Science.

A.B. (Colorado College) '10; B.C.L. (Oxford) '13; Colorado College, '14.

FREDERICK MATTHEW GERLACH, A.M. Hagerman Hall
Instructor in Education and Psychology.

A.B. (Colorado College) '14; A.M. (ibid.) '15; Colorado College, '15.

NELSON SUTRO GREENSFELDER, E.M. 311 E. Willamette Ave.
Assistant in Chemistry and Mineralogy.

E.M. (Colorado School of Mines) '12; Colorado College, '16.

FRANCES HALL, A.B. 4 Boulder Crescent
Instructor in Latin and Greek.

A.B. (Colorado College) '12; Colorado College, '16.

EDWARD JUNG E HICKOX, A.B., B.P.E. 927 N. Weber St.
Instructor in Physical Education.

A.B. (Ohio Wesleyan) '05; B.P.E. (International Y. M. C. A. College) '14; Colorado College, '14.

WILLIAM SHARPLESS JACKSON, JR., A.B., LL.B. 228 E. Kiowa St.
Lecturer in Banking Practice.

A.B. (Harvard) '11; LL.B. (Denver Law School) '15; Colorado College, '16.

JOSEPHINE KELLERMANN 1426 N. Corona St.
Instructor in German.

Höhere Töchterchule, Bonn; Colorado College, '11.

I. ALLEN KEYTE, B.S. in Ed. 17 Ramona Ave., Ivywild
Instructor in Geology.

B.Pd. (Missouri State Normal) '03; M.Pd. (ibid.) '07; B.S. in Ed. (University of Missouri) '09; Colorado College, '16.

ROBERT AUGUSTUS KLAHR, A.B., M.C.S. 315 E. Yampa St.
Instructor in Accounting.

A.B. (Dartmouth) '08; M.C.S. (ibid.) '09; Colorado College, '14.

CHARLES TROWBRIDGE LATIMER, A.B. 923 N. Wahsatch Ave.
Instructor in Romance Languages.

A.B. (Colorado College) '16; Colorado College, '16.

ROFENA MARY LEWIS, A.B. McGregor Hall

Instructor in Botany.

A.B. (Colorado College) '14; Colorado College, '16.

NELSON ROOSEVELT LOVE, B.S. 1018 N. Weber St.

Director of the Shops.

B.S. in E.E. (Colorado College) '12; Colorado College, '15.

RAY FOSTER LOVE, A.B. 1425 N. Tejon St.

Instructor in Chemistry.

A.B. (Colorado College) '11; Colorado College, '16.

MRS. LESTER McLEAN, JR., PH.B. Bemis Hall

*Assistant to the Dean of Women and Adviser to the Young
Women's Christian Association.*

PH.B. (Colorado College) '00; Colorado College, '16.

MABEL PARISH, A.M. McGregor Hall

Instructor in History.

M.Dr. (Iowa State Teachers' College) '06; A.B. (University of Colorado)
'14; A.M. (ibid.) '15; Colorado College, '16.

HENRY CHILDS REHM, LL.B., B.D. 929 N. Nevada Ave.

Lecturer in Sociology.

LL.B. (Wisconsin) '99; B.D. (Oberlin) '06; Colorado College, '16.

JAMES EARL ROBERTSON, B.S. in C.E. 416 N. Tejon St.

Instructor in Graphics.

B.S. in C.E. (Michigan Agricultural College) '09; Colorado College, '16.

CLAUDE JAMES ROTHGEB 1211 N. Weber St.

Director of Athletics, and Instructor in Physical Training.

*LOIS ELLETT SMITH, A.M. McGregor Hall

Instructor in Biology.

A.B. (Colorado College) '12; A.M. (ibid.) '15; Colorado College, '12.

*Absent during year 1916-'17.

ELMO SCOTT WATSON, A.B. 1106 N. Weber St.
Instructor in English.

A.B. (Colorado College) '16; Colorado College, '16.

KATHERINE DENISE WOLLASTON, PH.B. Bemis Hall
Instructor in Romance Languages.

PH.B. (Chicago) '13; Colorado College, '15.

EARL CRANSTON EWERT 1129 N. Nevada Ave.
Student Assistant in Public Speaking.
 Colorado College, '16.

FERNANDO CARLOS TAMAYO Administration Building
Student Assistant in Spanish.
 Colorado College, '16.

EDWARD DANFORTH HALE, A.M. 1424 N. Nevada Ave.
Dean of the Department of Music, and Professor of the Theory and Literature of Music and the Pianoforte.

A.B. (Williams) '80; A.M. (ibid.) '83; Professor at the New England Conservatory, '85-'04; Colorado College, '05.

HENRY HOWARD BROWN, 1716 Wood Ave.
Instructor in Voice Culture.

Pupil of E. W. Glover (Ass't Director for Cincinnati May Festivals) '00; J. A. Broeckhaven, '00-'01; James Sauvage, '01; Dora Topping, '02-'04; Max Spicker, '03-'06; Amherst Webber (Coach of Mm. J. and E. de Reszke, Mmes. Nordica, Eames, and others) '05; Colorado College, '14.

MRS. GEORGE MAXWELL HOWE, 1811 N. Nevada Ave.
Instructor in Violin.

Cincinnati Conservatory of Music, '01-'03; Stanton College, Natchez, Miss., '03-'05; Sternsches Konservatorium, Berlin, '05-'06; Woman's College, Columbia, S. C., '06-'07; Colorado College, '10.

EMMONS LUETSCHER, 1317 N. Weber St.
Instructor in Violoncello.

Pupil of Bruno Steindel, '10; Carl Brueckner, '11-'14; University of Wisconsin, '12-'14; Colorado College, '16.

ALEXANDER PIRIE, A.R.C.O.

632 N. Nevada Ave.

Instructor in Organ.

Pupil of T. H. Collinson, Mus. Bac. F.R.C.O., Edinburgh, Scotland, for Organ, Harmony and Orchestration, '04-'06; Pupil of W. Townsend, College of Music, London, England, for Piano, '02-'04; Assistant Organist, The Cathedral, Edinburgh, Scotland, '07, '10; Assistant Organist to The University of Edinburgh, '07, '10; Associate of the Royal College of Organists, London, England, '07; Colorado College, '16.

JANET ZILPAH WARNOCK,

Bemis Hall

Instructor in Voice Culture.

Colorado College and School of Music, '14-'16; Colorado College, '16.

EXCHANGE PROFESSORS AND LECTURERS

AT COLORADO COLLEGE.

JAMES HARDY ROPES, D.D.,

Hollis Professor of Divinity at Harvard University.

Exchange Professor in the Second Half-year, 1916-'17.

AT HARVARD UNIVERSITY.

WARREN MILTON PERSONS, PH.D.,

Dean of the Department of Business Administration and Banking, and Professor of Economics and Finance.

Exchange Professor at Harvard University for the year, 1916-'17.

Committees of the Faculty, 1917-1918

Administration—Mr. Cajori, Miss Brown, Mr. Fales, Miss Loomis, Mr. Mierow, Mr. Motten, Mr. Parish, Mr. Parsons, Mr. Persons, Miss Sahm, Mr. Schneider, Mr. Strieby, Mr. Thomas.

Accredited Schools—Mr. Breitwieser, Mr. Motten.

Advanced Degrees—Mr. Cajori, Mr. Baker, Mr. Howe, Mr. Mierow, Mr. Persons, Mr. Schneider.

Athletics—Mr. Schneider, Miss Davis, Mr. Hickox, Miss Loomis, Mr. Okey, Mr. Motten, Mr. Rothgeb, Mr. Thomas.

Catalogue—Mr. Ellingwood, Miss Brown, Mr. Gerlach, Mr. Noyes.

Chapel Officer—Mr. Albright.

College Lecture Course—Mr. Woodbridge, Mr. Noyes, Mr. Tileston.

Hagerman Hall—Mr. Gerlach, Mr. Baker, Mr. Motten.

Individual Courses—Mr. Parsons, Mr. Blum, Miss Brown, Mr. Cajori, Miss Loomis, Mr. Motten, Mr. Thomas, Mr. Woodbridge.

Library—Mr. Ormes, Miss Canon, Mr. Parish, Mr. Persons.

Music—Mr. Hale, Mr. Brown, Mr. Ellingwood, Mrs. Howe, Mr. Parsons, Miss Sahm.

Publications—Mr. Cajori, Mr. Ellingwood, Mr. Howe, Mr. Schneider.

Publicity—Mr. Howe, Mr. Baker, Mr. Blum, Mr. Watson.

Schedule—Mr. Albright, Mr. Parish, Mr. Tileston.

Scholarships—Mr. Cajori, Miss Brown, Miss Loomis, Mr. Parsons, Mr. Persons, Mr. Schneider.

Social Life—Mr. Cajori, Miss Brown, Mr. Fales, Miss Loomis, Mr. Parsons, Mr. Persons, Mr. Schneider.

Student Activities—Mr. Motten, Miss Loomis, Miss Sahm, Mr. Tileston.

Student Self-Help—Mr. Motten, Mr. Ellingwood, Mr. Gerlach.

Class Officers

<i>Senior</i>Mr. Cajori
<i>Junior</i>Mr. Breitwieser
<i>Sophomore.</i>Mr. Schneider
<i>Freshman</i>Mr. Motten
<i>Special</i>Mr. Tileston

Admission

REGISTRATION.

Before registering, each candidate must present to the Dean a certificate of moral character, signed by some responsible person in the community in which he has made his home. School authorities are asked to mail credits direct to the Registrar.

Students are required to register promptly and attend the first exercise in their courses. A fee for late registration will be charged as follows: \$1.00 for registration, first half-year, later than noon on Saturday, September 15, 1917; \$1.00 for registration, second half-year, later than noon on Saturday, January 26, 1918.

ENTRANCE REQUIREMENTS

FOR

COURSES LEADING TO THE DEGREE OF BACHELOR OF ARTS AND THE
DEGREE OF BACHELOR OF ARTS IN BUSINESS ADMINIS-
TRATION AND BANKING.

1. ENGLISH, 3 units.*
2. HISTORY, 1 unit.
3. MATHEMATICS, 2 units (preferably 3).
4. LATIN, FRENCH, GERMAN or SPANISH, 4 units, of which 2 must be Latin.†
5. SCIENCE, 2 units (to be selected from the list of sciences given below in 6; but the student is advised to offer Chemistry and Physics. If the student offers Greek, only one unit of science is required).
6. ELECTIVES, sufficient to make a total of 15 units.
 - English, 1 unit.
 - Greek, 1, 2, or 3 units.
 - German, 1 or 2 units.
 - French, 1 or 2 units.
 - Spanish, 1 or 2 units.
 - Mathematics, 1 unit.

*A unit is a course covering a school year of not less than 35 weeks, with 4 or 5 periods of at least 40 minutes each a week. Only one unit of deficiency is allowed for entrance.

†If a student has not taken preparatory Latin, but brings 15 other units of acceptable work, he will be allowed to begin Latin in college, the work counting toward his degree. Only the first two years of preparatory Latin are offered.

History, 1 or 2 units.
Civil Government, $\frac{1}{2}$ unit.
Chemistry, 1 unit.
Physics, 1 unit.
Physiology, $\frac{1}{2}$ unit.
Zoology, $\frac{1}{2}$ unit.
Botany, $\frac{1}{2}$ unit.
Physiography, $\frac{1}{2}$ unit.
Geology, $\frac{1}{2}$ unit.
Mechanical Drawing, 1 unit.

ENTRANCE REQUIREMENTS

FOR

COURSES LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN
ENGINEERING AND THE DEGREE OF FOREST ENGINEER.

(15 UNITS.)

The requirements for admission to the engineering courses are as follows:

1. MATHEMATICS (3 units)—(a.) Algebra through simultaneous quadratic equations; (b.) Elementary Plane Geometry; (c.) Solid and Spherical Geometry; (d.) Review Algebra, Ratio and Proportion, Binomial Theorem, Arithmetical and Geometrical Progressions, Elements of Permutations and Combinations. Plane Trigonometry is desirable but not necessary. A thorough preparation is of great importance.
2. PHYSICS (1 unit)—One year's course. See p. 28.
3. CHEMISTRY (1 unit)—One year's course. See p. 28.
4. ENGLISH (3 units)—As in the College of Arts. See p. 24.
5. FOREIGN LANGUAGES (2 units)—Two years. See pp. 26-27.
6. AMERICAN, AND ENGLISH OR ANCIENT HISTORY (1 unit)—One year's course in each. See pp. 25-26.
7. ELECTIVES (4 units)—Preferably in modern languages and history. See pp. 25-27.

Students who have had a high school course in trigonometry may receive advanced standing in this subject in the Department of Engineering by passing an examination at the beginning of the college year.

UNIT COURSES IN PARTICULAR SUBJECTS.

1. ENGLISH—(3 units).

- (a) A practical knowledge of grammar and the elements of rhetoric.
- (b) A careful study of the following works, recommended by the Conference on Uniform Entrance Requirements in English, from the point of view of explanation of allusions, meanings of unusual words, acquaintance with the periods of literary history represented, etc., as well as that of subject matter, structure, and literary quality:

Shakespeare's *Macbeth*; Milton's *Comus*, *L'Allegro*, and *Il Penseroso*; Burke's *Speech on Conciliation with America*, or Washington's *Farewell Address* and Webster's *First Bunker Hill Oration*; Macaulay's *Life of Johnson*, or Carlyle's *Essay on Burns*.

- (c) A less minute study of the following works, sufficient to give the candidate a clear idea of their important parts:

READING.—Group I. (Two to be selected): *The Old Testament*, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther; Homer's *Odyssey*, with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII; Homer's *Iliad*, with the omission, if desired, of books XI, XIII, XIV, XV, XVII, XXI; Vergil's *Aeneid*. The *Odyssey*, *Iliad*, and *Aeneid* should be read in English translations of recognized literary excellence. *For any unit of this group a unit from any other group may be substituted.*

Group II. (Two to be selected): Shakespeare's *Merchant of Venice*, *Midsummer Night's Dream*, *As You Like It*, *Twelfth Night*, *Henry the Fifth*, *Julius Cæsar*.

Group III. (Two to be selected): Defoe's *Robinson Crusoe*, Part I; Goldsmith's *Vicar of Wakefield*; Scott's *Ivanhoe*, or *Quentin Durward*; Hawthorne's *The House of the Seven Gables*; Dickens's *David Copperfield*, or *Tale of Two Cities*; Thackeray's *Henry Esmond*; Mrs. Gaskell's *Cranford*; George Eliot's *Silas Marner*; Stevenson's *Treasure Island*.

Group IV. (Two to be selected): Bunyan's *Pilgrim's Progress*, Part I; The *Sir Roger de Coverley Papers* in the *Spectator*; Franklin's *Autobiography*, (condensed); Irving's *Sketch Book*; Macaulay's *Essay on Lord Clive*, and *Essay on Warren Hastings*; Thackeray's *English Humourists*; *Selections from Lincoln*, including at least the two *Inaugurals*, and the *Speeches in Independence Hall* and at *Gettysburg*, *Last Public Address*, *Letter to Horace Greeley*, together with a brief memoir or estimate; Parkman's *Oregon Trail*; Thoreau's *Walden*, or Huxley's *Autobiography*, and *Selections from Lay Sermons*, including the addresses on *Improving Natural Knowledge*, *A Liberal Education*, and *A Piece of Chalk*; Stevenson's *Inland Voyage*, and *Travels With a Donkey*.

Group V. (Two to be selected): Palgrave's *Golden Treasury* (First Series) Books II and III, with especial attention to Dryden, Collins, Gray, Cowper, and Burns; Gray's *Elegy in a Country Churchyard*, and Goldsmith's *Deserted Village*; Coleridge's *Ancient Mariner*, and Lowell's *Vision of Sir Launfal*; Scott's *Lady of the Lake*; Byron's *Childe Harold*, Canto IV, and *The Prisoner of Chillon*; Palgrave's *Golden Treasury* (First Series) Book IV, with especial attention to Wordsworth, Keats, and Shelley; Poe's *Raven*; Longfellow's *Courtship of Miles Standish*, and Whittier's *Snow Bound*; Macaulay's *Lays of Ancient Rome*, and Arnold's *Sohrab and Rustum*; Tennyson's *Gareth and Lynette*, *Lancelot and Elaine*, and *The Passing of Arthur*; Browning's *Cavalier Tunes*, *The Lost Leader*, *How They Brought the Good News from Ghent to Aix*, *Home Thoughts from Abroad*, *Home Thoughts from the Sea*, *Incident of the French Camp*, *Hervé Riel*, *Pheidippides*, *My Last Duchess*, and *Up at a Villa—Down in the City*.

Although the books mentioned above are recommended as preparation for this part of the requirement, they are not prescribed. Books of equal merit, covering a similar range of literary types, will be accepted as equivalents.

2. HISTORY—(1 unit.) An outline knowledge of the leading facts of either Ancient, Greek and Roman, Mediaeval and Modern, American, or English History.

- (a) Ancient History: Myers and Botsford, Myers, West, or an equivalent.
- (b) Greek and Roman: Botsford, Allen, or an equivalent.
- (c) Mediaeval and Modern: Myers, or an equivalent.
- (d) American: Channing, McLaughlin, Thomas, Johnston, or an equivalent.
- (e) English: Larned, Coman and Kendall, or an equivalent.

3. MATHEMATICS—(2 or 3 units.)

- (a) Algebra, through simultaneous quadratic equations ($1\frac{1}{2}$ units).
- (b) Elementary Plane Geometry; the first five books of Phillips and Fisher's, Wells's, or Wentworth's *Geometry*, or an equivalent (1 unit).
- (c) Solid and Spherical Geometry ($\frac{1}{2}$ unit).
- (d) Plane Trigonometry ($\frac{1}{2}$ unit).

It is recommended that Algebra and Plane Geometry be reviewed in the last year of the preparatory course.

4. LATIN—

- (a) An accurate and ready knowledge of grammatical forms. *Cæsar's Gallic Wars*, Bks. I.-IV., or an equivalent. Prose Composition based on Cæsar. Careful attention should be given from the beginning to correct pronunciation of the Latin and to the use of idiomatic English in translation. (2 units.)
- (b) Cicero: Seven orations. The following are recommended: The four orations against Catiline, Archias, the Manilian Law, Marcellus. Translation at sight of easy passages of prose. Prose Composition. (1 unit.)
- (c) Vergil: *Aeneid*, Bks. I.-VI. Prose Composition based on Cicero. (1 unit.)

5. GREEK—

- (a) White's First Greek Book, or an equivalent. Xenophon's *Anabasis* (20 or 30 pages). Practice in sight translation. The rules of accentuation. (1 unit.)
- (b) Four books of the *Anabasis*. Reading at sight. Prose Composition based on the *Anabasis*. Careful grammatical study. (1 unit.)
- (c) Three books of the *Iliad* with prosody and dialectic forms. Sight translation. Prose Composition. (1 unit.)

6. GERMAN, FRENCH, AND SPANISH—(1 or 2 units).

- (a) The work of the first year should comprise: (1) Drill in the rudiments of grammar; (2) careful drill in pronunciation; (3) the memorizing and frequent repetition of easy colloquial sentences; (4) abundant easy exercises; (5) the reading in graduated texts of from 75 to 100 pages of German, or from 100 to 175 pages of French or Spanish prose.
- (b) The work of the second year should comprise: (1) The careful reading of from 150 to 200 pages of German literature, or from 250 to 400 pages of French or Spanish literature, in the form of easy stories or historical or biographical sketches; (2) practice in the translation, from English, of easy variations from the matter read, and also in free reproduction, sometimes orally and sometimes in writing, of the substance of short and easy selected passages; (3) continued drill in the rudiments of grammar.

Good texts for the second year, arranged in suitable order for reading, would be:

GERMAN: Andersen, *Märchen*; Leander, *Träumereien*; Hauff, *Das kalte Herz*; Hillern, *Höher als die Kirche*; Storm, *Immensee*; Baumbach, *Der Schwiegersohn*; Heyse, *L'Arrabiata*, *Das Mädchen von Treppi*; Gerstäcker, *Germelshausen*. Texts edited for instruction by the direct method are recommended, especially those of the *Walter-Krause* series.

FRENCH: (1) Mairat, *la Tâche du petit Pierre*; Malot, *Sans famille*, or Bruno, *le Tour de la France*; (2) Labiche et Martin, *le Voyage de M. Perrichon*; Halévy, *l'Abbé Constantin*, or Mérimée, *Colomba*; (3) Dumas, *la Tulipe noire*, or Erckmann-Chatrian, *Madame Thérèse*; (4) Sarcy, *le Siège de Paris*, or Lamartine, *Jeanne d'Arc*; (5) Daudet, *Contes*, or George Sand, *la Mare au diable*.

SPANISH: (1) Valera, *El pájaro verde*, and Alarcón *El Capitán Veneno*, or about 150 pages of selected short stories; (2) Pérez Galdós, *Doña Perfecta* or *Marianela*; (3) Echegaray, *Ó locura ó santidad*, Ramos y Vidal, *Zaragüeta*, or Moratín, *El sí de las niñas*.

A third and a fourth year of German or French will be accepted as an elective entrance subject, if the work has been done satisfactorily. Candidates are advised to present

two units of German, French or Spanish, as preparatory to admission to the German 2, French 2, or Spanish 2, given in the college.

7. PHYSICS—(1 unit). Not less than two hours a week of recitation and four of laboratory work; Millikan and Gale's *First Course in Physics*; Carhart and Chute's *Elements of Physics*, or an equivalent.
8. CHEMISTRY—(1 unit). Williams' *Elements of Chemistry*, or an equivalent.
9. PHYSIOLOGY—($\frac{1}{2}$ unit). Text book work should cover such a text as Blaisdell's *Practical Physiology*. In addition, the course should include a rough dissection, by the teacher, of the frog and cat, and a microscopic examination of the more important tissues.
10. ZOÖLOGY—($\frac{1}{2}$ unit). Textbook work equal in amount to that contained in Kellogg, Jordan, or Davenport; laboratory work on the structure of at least ten forms and a comparison with other types. The drawings and descriptions in the candidate's laboratory notebook must be certified by the teacher.
11. BOTANY—($\frac{1}{2}$ unit). A knowledge of the structure and more important physiological processes of flowering plants, of the modifications of parts for special functions, of the plant societies, of pollination and dissemination. It is also desirable that the candidate have the ability to identify ordinary seed plants. A laboratory notebook certified by the teacher must be presented by the candidate. Such texts as Bergen's *Foundation of Botany* and Coulter's *Plant Studies* are recommended.
12. PHYSIOGRAPHY—($\frac{1}{2}$ unit). Tarr, Davis, Dryer, or an equivalent.
13. GEOLOGY—($\frac{1}{2}$ unit). Scott's *Introduction to Geology*, or an equivalent, with practice in the determination of the commoner rocks, igneous, sedimentary, and metamorphic.
14. MECHANICAL DRAWING—(1 unit).

ADMISSION BY CERTIFICATE.

Candidates who offer satisfactory evidence of having completed a preparatory course equivalent to the above requirements will be admitted without condition into the Freshman Class. Each candidate must bring from the principal of the school last attended a personal statement as to his grade of scholarship.

ACCREDITED SCHOOLS.

The following schools are on the accredited list. A certificate of the satisfactory completion, in any of them, of any study required for admission to the College, will be accepted:

Alamosa High School.	Idaho Springs High School.
Arvada High School.	Lafayette High School.
Aspen High School.	La Junta High School.
Cañon City High School.	Lamar High School.
Cañon City So. Side High School.	Las Vegas (N. M.) High School.
Central City High School.	Leadville High School.
Cheyenne County High School.	Littleton High School.
Cheyenne (Wyo.) High School.	Longmont High School.
Colorado City High School.	Loveland High School.
Colorado Springs High School.	Manitou High School.
Cripple Creek High School.	Manzanola High School.
Del Norte High School.	Monte Vista High School.
Delta High School.	Montrose High School.
East Denver High School.	Ogden, Utah, High School.
North Denver High School.	Ouray High School.
West Denver High School.	Palisades High School.
South Denver High School.	Paonia High School.
Denver Manual Train. High School.	Pueblo High School, Dist. No. 1.
Douglas Co. H. S., Castle Rock.	Pueblo High School, Dist. No. 20.
Durango High School.	Rocky Ford High School.
Eaton High School.	Rowland Hall, Salt Lake City.
Florence High School.	Saguache Co. High School.
Fort Collins High School.	Salida High School.
Fort Morgan High School.	Salt Lake City High School.
Fountain High School.	State Teacher's College High School.
Fruita High School.	Sterling High School.
Georgetown High School.	St. Stephen's Academy.
Glenwood Springs High School.	Telluride High School.
Golden High School.	Trinidad High School.
Grand Junction High School.	Victor High School.
Greeley High School.	Walsenburg High School.
Gunnison High School.	Wheat Ridge High School, Alcott.
Holly High School.	Miss Wolcott's School, Denver.
Holyoke High School.	Windsor High School.

Certificates from schools not on the accredited list will be considered as the merits of each case may warrant.

ADMISSION TO ADVANCED STANDING.

Students who offer satisfactory evidence of having completed studies equivalent to those offered by the College will be received into advanced classes. The Faculty usually receive certificates from other colleges, but reserve the right to examine any candidate. All credits should be mailed to the Registrar.

SPECIAL STUDENTS.

Special students will be received, at the discretion of the Faculty, into such classes as they are qualified to enter. It is the rule of the College that such students must attend the examinations as well as the ordinary recitations of their classes, subject to the same conditions as other students.

Several of the courses of lectures which form part of the College instruction, are open to the public on payment of a fee of \$5.00 for each half-year course (see p. 121), and without any requirements of examination.

REQUIREMENTS FOR DEGREES

GENERAL RULES.

The credit unit in all courses is one hour a week for a half-year. In courses continuing throughout the year, no credit is given for a half-year's work except by vote of the committee on individual courses and with the approval of the head of the department concerned. To be accredited as passing work, a course must be graded at least 60%. No student will be allowed to take a degree from Colorado College who has not been a resident in the institution for at least one full year. No credit is allowed for work done out of course or in absentia, except with the permission of the committee on individual courses; such permission must be obtained in advance.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS.

In the Department of Arts and Sciences, only one degree is given, that of Bachelor of Arts. To secure this the student is required to complete a course of study consisting of (1) certain prescribed studies, (2) a specified number of hours in a major subject, (3) enough free electives to bring his work up to the total requirement of 120 hours of scholastic work, making an average of 15 hours a week throughout the four years.* In addition he is further required to complete 6 hours' work in Physical Education (pp. 86-88). To satisfy the requirements for the degree of Bachelor of Arts, a student must obtain a grade above 69% in at least one-half the hours taken in Colorado College. It is recommended that students who are planning to work their way, in large part, through College, take five years for their course.

I. REQUIRED SUBJECTS.

Economics, History or Political Science.—Six hours in one of these subjects should be completed by the end of the Junior year.

English.—English 1; Freshman year, 3 hours. English 2; first half of Sophomore year, 3 hours. A literature course to be selected from English 4, 5, 9, 12, 13, 16, 17 and 19; second half of Sophomore year, 3 hours.

Foreign Languages.—Twelve hours in foreign languages should be completed by the end of the Sophomore year.

Mathematics.—Mathematics 1; first half, Freshman year, 3 hours. Mathematics 2 and 3; second half, Freshman year, 5 hours. Students offering Solid Geometry for admission are not required to take Mathematics 2.

*Except in the course leading to the degree of Bachelor of Arts in Business Administration and Banking (see p. 34).

Philosophy.—Philosophy 1, or Philosophy 2 and 3; 6 hours.

Physical Education.—Freshman year, 3 hours a week, credit 1 hour each half-year. Sophomore and Junior years, 2 hours a week, credit 1 hour each half-year.

Science.—Six hours in either Biology, Chemistry or Physics should be completed by the end of the Sophomore year.

II. REQUIREMENTS ARRANGED BY YEARS.

FRESHMAN YEAR.

<i>First Half-Year.</i>	Credit hours	<i>Second Half-Year.</i>	Credit hours
English 1, p. 69.....	3	English 1, p. 69.....	3
Foreign Language (see above).....	3	Foreign Language.....	3
Mathematics 1, p. 83.....	3	Mathematics 2 and 3, or 3 (see above) p. 83.....	3 or 3
Physical Education, p. 86.....	1	Physical Education, p. 86.....	1
Science (see above).....	3	Science.....	3
Elective.....	3	Elective.....	1 or 3
	—		—
	16		16

SOPHOMORE YEAR.

<i>First Half-Year.</i>	Credit hours	<i>Second Half-Year.</i>	Credit hours
Economics, History or Political Science, (see above).....	3	Economics, History or Political Science.....	3
English 2; p. 70.....	3	English, a literature course (see above).....	3
Foreign Language (if require- ment is not completed in the Freshman year).....	3	Foreign Language.....	3
Physical Education, p. 86.....	1	Physical Education, p. 86.....	1
Science (if not taken in the Freshman year).....	3	Science.....	3
Elective.....	3	Elective.....	3
	—		—
	16		16

JUNIOR YEAR.

<i>First Half-Year.</i>	Credit hours	<i>Second Half-Year.</i>	Credit hours
Economics, History or Political Science (if not completed in the Sophomore year).....	3	Economics, History or Political Science.....	3
Philosophy 1, or Philosophy 2, p. 84.....	3	Philosophy 1, or Philosophy 3, p. 84.....	3
Physical Education, p. 86.....	1	Physical Education, p. 86.....	1
Electives.....	9	Electives.....	9
	—		—
	16		16

SENIOR YEAR.

<i>First Half-Year.</i>	Credit hours	<i>Second Half-Year.</i>	Credit hours
Philosophy 1, or Philosophy 2 (if not completed in the Junior year) p. 84.....	4	Philosophy 1, or Philosophy 3, p. 84.....	4
Electives.....	11	Electives.....	11
	<hr/> 15		<hr/> 15

MAJOR SUBJECT.

In addition to the above prescribed subjects, each student shall select a major subject, if possible before the end of the Sophomore year, and, in any case, not later than the beginning of the Junior year. The professor in charge of the major subject will act as the student's advisor, and will have authority, with the Dean, to require the completion of work amounting to 30 hours in the major subject, or in the major subject and in such minor subjects as he shall consider necessary, or in collateral work. Mention of the major subject will be made in the diploma. No work done in Colorado College will be counted toward the completion of a major subject if the grade is below C (70)

Any one of the following may be selected by the student as his major subject: (1) Art; (2) Art and Music;* (3) Astronomy; (4) Bible and Religion; (5) Biology; (6) Chemistry; (7) Economics; (8) Education; (9) English; (10) Geology; (11) German; (12) Greek; (13) History; (14) Latin; (15) Mathematics; (16) Philosophy; (17) Physics; (18) Political Science; (19) Romance Languages.

All courses except English 1, French 1, German 1, Mathematics 2, and Spanish 1, may be counted as part of the requisite 30 hours.

Petitions to change the major subject will be granted only when approved by the professors in charge of both the old and the new subjects; and the student will be held to all the requirements of the new major subject. In no case may the major subject be changed later than the beginning of the Senior year.

ELECTIVES.

The student shall elect, in addition to the prescribed subjects and the major subject, a sufficient number of courses to bring the total amount of his College work up to 120 hours (except in Business Administration; see p. 34).

*See p. 100.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS IN BUSINESS ADMINISTRATION AND BANKING.

The four years' course leading to the degree of Bachelor of Arts in Business Administration and Banking is designed to offer a thorough training in those branches of knowledge fundamental to business, using that term in its broadest sense. It is the aim of the Judson M. Bemis Department of Business Administration and Banking to emphasize those fundamental facts and principles of business which are necessary to its administration, but which are difficult or impossible to acquire in the ordinary routine of work in a complex business organization. The aim is, not to train students in business routine, but to instruct them so that when they enter business they will understand the significance of the work that they happen to be doing in its relation to the whole. A training in economics, finance, law, accounting, insurance, advertising and the like, familiarity with business terms, the reading of commercial journals, and the daily discussion of banking and industrial topics will enable the student to make the transition from college to business more readily than he otherwise could.

The requirements for the degree of Bachelor of Arts in Business Administration and Banking are the same as those for the regular degree of Bachelor of Arts (including the requirements for Physical Education, p. 86) except as follows: Business 12 is required in the Freshman year instead of Mathematics 3; Economics 1 is required in the Sophomore year in addition to the other requirements (see p. 35); and 68 half-year hours are required in the Junior and Senior years, of which 55 half-year hours are prescribed. For the degree from the Department a standing of C or more is required in thirty hours of the required work in Economics, Political Science and Business included in which must be Business 1 and 5 and either Business 6 or Business 9 and 10.

In planning the course certain considerations have been kept in mind, i. e., to prevent over-specialization by broad requirements in the Freshman and Sophomore years; to develop a professional spirit among the Juniors and Seniors by requiring greater specialization than obtains under the system of major studies; to secure the elasticity necessary because of the diverse needs of the students by means of options and free electives. Thus, a student planning to enter journalism should elect courses in English, history, and political science; one intending to enter the consular service should elect modern languages,

political science, and law; for banking he should elect Economics 10, Business 9 and 10; for actuarial and statistical work he should elect mathematics and Economics 19; for mercantile and manufacturing pursuits he should elect Business 6. Other combinations will suggest themselves to those preparing for chamber of commerce secretaryships, teaching of commercial branches in high schools, etc.

FRESHMAN YEAR.

<i>First Half-Year.</i>	Credit hours	<i>Second Half-Year.</i>	Credit hours
English 1, p. 69.....	3	Business 12 and Mathemat-	
Mathematics 1, p. 83.....	3	ics 2, pp. 53 and 83....	5 or 3
Modern Language.....	3	English 1, p. 69.....	3
Physical Education, p. 86....	1	Modern Language.....	3
Science.....	3	Physical Education, p. 86....	1
Elective.....	3	Science.....	3
	<hr/>	Elective.....	3
	16		<hr/>
			16

SOPHOMORE YEAR.

<i>First Half-Year.</i>	Credit hours	<i>Second Half-Year.</i>	Credit hours
Economics 1, p. 63.....	3	Economics 1, p. 63.....	3
English 31, p. 70.....	3	English.....	3
Modern Language.....	3	Modern Language.....	3
Physical Education, p. 86....	1	Physical Education, p. 86....	1
Electives.....	6	Electives.....	6
	<hr/>		<hr/>
	16		16

JUNIOR YEAR.

<i>First Half-Year.</i>	Credit hours	<i>Second Half-Year.</i>	Credit hours
Accounting (Bus. 1) p. 53...	3	Accounting (Bus. 1) p. 53...	3
Commercial Development		Commerce and Industries	
(Econ. 21) p. 63.....	3	(Bus. 3) p. 53.....	3
Commercial Law		Commercial Law	
(Bus. 5) p. 54.....	3	(Bus. 5) p. 54.....	3
Elements of Political Science		Money and Banking	
(Pol. Sci. 1) p. 89.....	3	(Econ. 9) p. 64.....	3
Physical Education, p. 86....	1	Physical Education, p. 86....	1
Transportation (Bus. 7) p. 54		Public Finance (Econ. 10) p. 64	
or		or	
Insurance (Econ. 19) p. 64...	3	Labor (Econ. 22) p. 65.....	3
Elective.....	2	Elective.....	2
	<hr/>		<hr/>
	18		18

SENIOR YEAR.

<i>First Half-Year.</i>	Credit hours	<i>Second Half-Year.</i>	Credit hours
Relation of Legislation to Economics (Bus. 15) p. 55.	2	Advanced Accounting (Bus. 14) p. 53.....	2
Business Organization (Bus. 6) p. 54.....	3	Investment and Speculation (Bus. 10) p. 55.....	3
or		Commercial Law (Bus. 13) p. 54	2
Banking Practice (Bus. 9) p. 55		Corporation Finance (Bus. 4) p. 53.....	3
Commercial Law (Bus. 13) p. 54	2	Ethics (Phil. 3) p. 85.....	3
History of Philosophy (Phil. 2) p. 85.....	3	Elective.....	3
Statistics (Econ. 18) p. 64...	3		16
Elective.....	3		
	16		

REQUIREMENTS FOR THE DEGREES OF BACHELOR OF SCIENCE IN CIVIL AND IRRIGATION ENGINEERING

CIVIL ENGINEERING.†

The four years' course leading to the degree of Bachelor of Science in Civil Engineering is designed to afford a thorough analytical training as well as numerous and extended practical exercises in those matters that pertain to the profession of the civil engineer, including all kinds of structures and public works, and also the various developments and applications of power by the use of electric, steam, water, and air motors.

The theoretical portion of the instruction is based largely upon the courses given in the departments of mathematics and physics, and the results obtained are applied to practical engineering work. Special stress is laid upon the design by the student of the various structures and machines which the civil engineer is called upon to construct in the practice of his profession.

The instruction is given by lectures, demonstrations by the student, and frequent conferences, co-ordinate with which the work of design is carried on. It covers comprehensively the subjects of surveying, water supply of cities and towns, irrigation, sanitary engineering, including sewage disposal, graphic and analytic treatment of all metallic

†The requirements for Physical Education are the same as in the Department of Arts and Sciences, p. 32.

structures, foundations, retaining and reservoir walls, high masonry dams, sewer systems, hydraulic engineering, rivers and harbors, hydraulic, steam, and electric motors.*

FRESHMAN YEAR.

<i>First Half-Year.</i>	Credit hours	<i>Second Half-Year.</i>	Credit hours
Algebra (Math. 1) p. 83.....	4	Advanced Chemistry (Chem. 2) p. 55.....	3
Advanced Chemistry (Chem. 2) p. 55.....	3	Descriptive Geometry (Graphics 2) p. 78.....	5
Descriptive Geometry (Graphics 2) p. 78.....	1	Modern Language.....	3
Mechanical Drawing (Graphics 1) p. 78.....	2	Physical Education, p. 86....	1
Modern Language.....	3	Plane Surveying (Civil 1) p. 58.....	2
Physical Education, p. 86....	1	Rhetoric and Comp. (Eng. 1) p. 69.....	3
Rhetoric and Composition (English 1) p. 69.....	3	Trigonometry (Math. 3) p. 83.....	4
Woodwork (Shop 1) p. 94....	2		

Summer Course in Surveying (Civil 201), p. 63, four weeks in Manitou Park, credit 4 hours.

SOPHOMORE YEAR.

<i>First Half-Year.</i>	Credit hours	<i>Second Half-Year.</i>	Credit hours
Analytical Geom. (Math. 4) p. 83.....	3	Analytical Geometry (Math. 5) p. 83.....	2
Differential Calculus (Math. 6) p. 83.....	3	Integral Calculus (Math. 6) p. 83.....	4
Experimental Physics (Phys. 5) p. 88.....	2	Gen. Physics (Phys. 4) p. 88.....	3
Gen. Physics (Phys. 2) p. 88.....	3	Experimental Physics (Phys. 6) p. 88.....	1
Machine Design (Graph. 3) p. 78.....	2	Precision of Measurements (Phys. 8) p. 89.....	1
Modern Language.....	2	Graphic Statics (Graphics 4) p. 78.....	2
Physical Education, p. 86....	1	Modern Language.....	2
		Forging (Shop 3) p. 94.....	1
		Field Astronomy (Civil 2) p. 58.....	3
		Physical Education, p. 86....	1

*For ease in reference, associated courses in the departments of Civil Engineering, Irrigation Engineering, and the Summer School of Surveying, as listed on pp. 58-63, are numbered to indicate such association (1, 21, 201, etc.), a group of ten numbers being assigned for each general subdivision.

JUNIOR YEAR.

<i>First Half-Year.</i>	Credit hours	<i>Second Half-Year.</i>	Credit hours
Advanced Surveying (Civil 5) p. 58	2	Resistance of Materials (Civil 81) p. 62	2
Geology 1, p. 75	3	Power Plants (Electrical 15) p. 69	2
Hydraulics (Civil 41) p. 60 ..	2	Physical Education, p. 86	1
Hydraulic Laboratory (Civil 42) p. 61	2	Mechanics (Math. 12) p. 84 ...	3
Masonry (Civil 31) p. 59	2	Railway Engineering (Civil 21) p. 59	3
Mechanics (Math. 12) p. 84 ..	3	Stresses (Civil 83) p. 62	3
Physical Education, p. 86	1	Testing Laboratory (Civil 82) p. 62	1
Railway Curves (Civil 20) p. 59	2		
Resistance of Materials (Civil 81) p. 62	3		
Thermodynamics (Electrical 16) p. 69	2		

SENIOR YEAR.

<i>First Half-Year.</i>	Credit hours	<i>Second Half-Year.</i>	Credit hours
Bridge Design (Civil 84) p. 62. 3		Bridge Design (Civil 84) p. 62. . 4	
Elementary Law (Bus. 5) p. 54. 3		Irrigation (Civil 51) p. 61	3
Electrical Engineering (Electrical 14) p. 69	3	Sanitary Engineering (Civil 62) p. 61	2
Economics (Econ. 1) p. 63	3	Roads and Parks (Civil 71) p. 62	2
Foundations (Civil 33) p. 60 ..	2	Electrical Engineering (Electrical 14) p. 69	3
Railway Economics (Civil 22) p. 59	2	Thesis.	
Reinforced Concrete (Civil 32) p. 60	2		
Water Supply (Civil 61) p. 61 ..	3		
Thesis.			

INSPECTION TRIP.

IRRIGATION ENGINEERING.

In order to meet the demands for men trained in the design, location, and construction of irrigation works, a special course in irrigation engineering is offered. The first year of this course is the same as in the Civil Engineering course; the second, third and fourth years differ from the regular Civil Engineering Course in the substitution of those subjects that bear more directly upon irrigation problems, such as special work in agricultural chemistry, soil physics, advanced work in hydraulics, and the design of stone, timber, and steel irrigation structures. The full equipment of the Civil Engineering department, including surveying instruments, testing machines, hydraulic laboratory and maps and plans, is available to the students of Irrigation Engineering.

The course differs from that in Civil Engineering in the following respects:

SOPHOMORE YEAR.—Civil 2 and Graphics 4 are omitted and Agricultural Chemistry (Chem. 8) is taken during the year.

JUNIOR YEAR.—During the second half-year, Irrigation (Civil 51) and Geology 1 replace Railway Engineering (Civil 21).

SENIOR YEAR.—During the second half-year, Hydraulic Engineering (Civil 43), and Meteorology take the place of Roads and Parks (Civil 71), and Railway Economics (Civil 22).

[The requirements for admission to courses in Civil and Irrigation Engineering are given on page 23. For description of laboratories, see page 107. For Physical Education, see p. 86.]

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING.*

The study of electricity begins in the Sophomore year, when, in the physics course, the student learns the fundamental phenomena of electricity and magnetism, the quantitative statement in mathematical form of their relations; and performs in the laboratory basic experiments which illustrate these phenomena and impress upon the mind the quantitative relations. In the Junior year the experiments are of a more technical and commercial character. The theory is studied in more detail and with the use of the calculus. Particular attention is given in this year to commercial measuring instruments, and to direct-current machines. A portion of the work is performed in accordance with the "preliminary report system," under which the student, from the general principles imparted in the theoretical courses, writes and receives back corrected, before performing a test, a critical statement of the theory and laboratory method of the test to be performed. In the Junior year are also given most of those courses like steam engineering and hydraulic engineering, without which the training of the electrical engineer would be too narrow for practical purposes. In the Senior year the preliminary report system is followed entirely; and the emphasis is placed upon alternating currents, questions of transmission and distribution, and engineering questions of cost.

A certain amount of reading in history, literature and popular science is required during each summer vacation in the course.

*The requirements for Physical Education are the same as in the Department of Arts and Sciences, p. 32.

FRESHMAN YEAR.

<i>First Half-Year.</i>	Credit Hours	<i>Second Half-Year.</i>	Credit hours
Algebra (Math. 1) p. 83.....	4	Descriptive Geometry	
Drawing (Graphics 1) p. 78....	2	(Graphics 2) p. 78.....	5
Descriptive Geometry		Forging (Shop 3) p. 94.....	1
(Graphics 2) p. 78.....	1	Modern Language.....	3
Modern Language.....	3	Pattern-Making (Shop 2) p. 94.	1
Physical Education, p. 86.....	1	Physical Education, p. 86....	1
Rhetoric and Composition		Rhetoric and Composition	
(English 1) p. 69.....	3	(English 1) p. 69.....	3
Woodwork (Shop 1) p. 94....	2	Trigonometry	
		(Math. 3) p. 83.....	4

SOPHOMORE YEAR.

<i>First Half-Year.</i>	Credit hours	<i>Second Half-Year.</i>	Credit hours
Advanced Chemistry		Advanced Chemistry	
(Chem. 2) p. 55.....	3	(Chem. 2) p. 55.....	3
Analytical Geometry		Analytical Geometry	
(Math. 4) p. 83.....	3	(Math. 5) p. 83.....	2
Differential Calculus		Experimental Physics	
(Math. 6) p. 83.....	3	(Phys. 6) p. 88.....	2
Experimental Physics		General Physics	
(Phys. 5) p. 88.....	2	(Phys. 4) p. 88.....	3
General Physics		Integral Calculus	
(Phys. 3) p. 88.....	3	(Math. 6) p. 83.....	4
Machine Design		Mechanism (Graphics 5) p. 78.	2
(Graphics 3) p. 78.....	2	Machine Shop	
Modern Language.....	2	(Shop 4) p. 94.....	1
Physical Education, p. 86....	1	Modern Language.....	2
		Physical Education, p. 86....	1
		Precision of Measurements	
		(Phys. 8) p. 89.....	1

JUNIOR YEAR.

<i>First Half-Year.</i>	Credit hours	<i>Second Half-Year.</i>	Credit hours
Advanced Electrical Lab.		Alternating-Current Theory	
(Electrical 3) p. 67.....	2	(Electrical 2) p. 67.....	3
Elements of Elect. Eng.		Direct Current Elect. Eng.	
(Electrical 1) p. 66.....	4	Lab. (Electrical 8) p. 68....	3
Economics (Econ. 1) p. 63....	3	Electrical Measuring Instru-	
Hydraulics (Civil 41) p. 60....	2	ments (Electrical 6) p. 67... 1	
Mechanics (Math. 12) p. 84 ..	3	Machine Work (Shop 5) p. 94.	1
Physical Education, p. 86....	1	Mechanics (Math. 12) p. 84..	3
Resistance of Materials		Physical Education, p. 86....	1
(Civil 81) p. 62.....	3	Power Plants	
Thermodynamics		(Electrical 15) p. 69.....	2
(Electrical 16) p. 69.....	2	Resistance of Materials	
		(Civil 81) p. 62.....	2
		Surveying (Civil 7) p. 59....	1
		Testing Laboratory	
		(Civil 82) p. 62.....	1

SENIOR YEAR.

<i>First Half-Year.</i>	Credit hours	<i>Second Half-Year.</i>	Credit hours
Alternating-Current Machinery (Electrical 5) p. 67.....	3	Alternating-Current Machinery (Electrical 5) p. 67.....	3
Alternating-Current Elect. Eng. Lab. (Electrical 11) p. 68	3	Alternating-Current Elect. Eng. Lab. (Electrical 11) p. 68...	2
Alternating-Current Instruments (Electrical 7) p. 67...	1	Electrical Engineering (Electrical 10) p. 68.....	2
Alternating-Current Measurement (Electrical 4) p. 67...	1	Electrical References (Electrical 13) p. 69.....	1
Dynamo Design (Electrical 12) p. 68.....	1	Engineering Inspections (Electrical 17) p. 69.....	1
Electrical Distribution (Electrical 9) p. 68.....	2	Hydraulic Engineering (Civil 43) p. 61.....	2
Electrical References (Electrical 13) p. 69.....	1	Thesis.	
Elementary Law (Bus. 5) p. 54.....	3		

REQUIREMENTS FOR THE DEGREE OF FOREST ENGINEER*

The Department of Forestry was established in the spring of 1905. The foundation was laid through the generosity of General Palmer and Dr. Bell, who presented the College a tract of 10,000 acres of land called Manitou Park. Of this, 3,200 acres of agricultural land have been sold, the proceeds being applied toward an endowment for the Department. The remainder of the tract, now known as the Manitou Forest, is timbered and is used for field instruction.

The aim of the Department is to give to students who intend to adopt Forestry as a profession a thorough training which will fit them for positions in the Government Forest Service, or as State Foresters, teachers of Forestry, or expert Foresters in private employ.

The location of the College in the National Forest region enables the Department of Forestry to fit its students particularly for administrative work in the Forest Service. The Department is excellently prepared to give the necessary instruction concerning the relations of the Forest Service with the grazing business, the mining

*The requirements for Physical Education are the same as in the Department of Arts and Sciences, p. 32.

business, and other enterprises characteristic of the West. Its location in the National Forest region makes it possible to secure the frequent aid of Forest Service officers for lectures or instruction.

Students who have completed two years of College work (60 half-year hours), in which the following courses, or their equivalents, have been included, will be admitted to instruction in the Department of Forestry as candidates for the degree of Forest Engineer: Biology 1, 3, and either 2 or 4 (p. 49); Chemistry 1 or 2, (p. 55); Civil 1 and 201 (p. 58); Civil 2 (p. 58); Civil 5 and 211 (p. 58); English 1 (p. 69); Geology 1 (p. 75); Graphics 6 (p. 79); Mathematics 1, 2, 3 (p. 83); (High school credit for Mathematics 2 is acceptable); modern language (2 years); Physics 1 and 2, or 3 and 4 (p. 88). Students who studied one or more than one modern language in preparatory school are advised to continue the study of that language in which they are most advanced. Further, the courses in Economics, Mineralogy, Meteorology, and Physics are commended as elective courses which will materially strengthen the student's Forestry Course.

The course in Forestry covers two years, and from the beginning of the college year until December 1 is conducted in the Manitou Forest, near Woodland Park, Colorado; from December 1 until the spring vacation in Colorado Springs; and from the spring vacation until June 1 in the Manitou Forest. In the Senior year the work of the spring term may be conducted elsewhere.

JUNIOR YEAR.

Fall Term, Manitou Forest.

Half-Year
Hours

Forest Mensuration (see Forestry 1, page 72), first half of term. . . 10

Winter Term—Colorado Springs.

Dendrology, (see Forestry 2, page 73); lectures or recitations 5
hours a week and 6 hours of laboratory work. 5

Wood Technology, (see Forestry 3, page 73); lectures 2 hours a
week and laboratory 4 hours. 2

Silviculture, (see Forestry 4, page 73); lectures 3 hours a week
and silvical field studies. 3

Forest Protection, (see Forestry 5, page 73); lectures 3 hours a
week. 2

Physical Education, p. 86. 1

Spring Term—Manitou Forest and Monument Nursery.

Silvicultural Operations (see Forestry 6, page 74). 10

SENIOR YEAR.

<i>Fall Term—Manitou Forest.</i>	Half-Year Hours.
Forest Management, (see Forestry 8, page 74); lectures 5 hours a week and daily field or office work.....	8
Forest Improvement Work (see Forestry 7).....	2
<i>Winter Term—Colorado Springs.</i>	
Forest Utilization, (see Forestry 9, page 74); lectures and recitations 5 hours a week.....	4
Forest Geography, (see Forestry 10, page 74); lectures or recitations 5 hours a week.....	4
Forestry Policy, (see Forestry 11, page 75); lectures or recitations 3 hours a week.....	2
<i>Spring Term.</i>	
Lumbering Operations, (see Forestry 12, page 75).....	10

Advanced Degrees

Permission to do graduate work in Colorado College does not necessarily imply admission to candidacy for the Master's degree. A graduate student who wishes to become a candidate for the degree must make application to the Committee on Advanced Degrees under whose supervision his work will be carried on. He is urged to make application at an early date, in order that the Committee may have time to pass on his qualifications for admission. The programme of study for the degree and the subject of the dissertation must also be submitted to the committee for approval.

DEGREE OF MASTER OF ARTS

The Master's Degree is conferred subject to the following conditions:

(1) The applicant must have received the Bachelor's degree from some reputable college or university, and must have a reading knowledge of French or German,—preferably both.

(2) The applicant must pursue in residence a minimum course of nine hours of advanced work a week for one year. The work shall include both a major and a minor subject, and at least five hours a week shall be taken in the major subject. In addition, the applicant must present a dissertation that embodies the result of a careful in-

vestigation, such dissertation to represent the equivalent of at least three hours of lectures a week for one year. The dissertation must be approved by the heads of the departments in which the major and minor subjects are taken and by a third professor, before the applicant is permitted to present himself for the final examination. The dissertation must be handed in not later than May 15, typewritten on pages 8½ by 11 inches, and a copy deposited with the College librarian.

(3) The final examination shall be oral and public, and it shall be in the presence of the professors in charge of the major and minor subjects and of a third professor. In the examination the applicant must give evidence not only that he has done satisfactorily the minimum requirements, as stated above, but also that he has a satisfactory knowledge of the general fields within which the major and minor subjects lie.

The fees are \$60 a year for tuition, \$5 for the diploma, and \$1 to bind the thesis.

Applications for the Master's Degree should be sent to the Chairman of the Faculty Committee on Advanced Degrees, who will furnish information about courses.

DEGREES OF CIVIL ENGINEER AND ELECTRICAL ENGINEER

The degrees of Civil Engineer (C.E.) and Electrical Engineer (E.E.) will be granted to graduates of Colorado College under the following conditions:

(1) The candidate must have the degree of Bachelor of Science in the course in which he seeks the professional degree.

(2) He must have been in practical work at least three years since receiving his Bachelor of Science degree.

(3) He must be registered and engaged in study under direction two years before he presents himself for his degree.

(4) The assigned work done must be equivalent, in the judgment of the department in which he seeks his professional degree, to fifteen half-year hours.

(5) A thesis upon an approved subject and the record of the candidate's professional experience must be submitted one month before the candidate appears for a degree.

(6) The candidate must appear before a Committee from the Engineering Faculty for an oral examination.

(7) The candidate will be judged by his thesis work and his general engineering knowledge and professional record.

The fees are \$25 each year and \$5 for a diploma.

THE HARVARD EXCHANGE.

An arrangement with Harvard University is in operation, by which that institution, each year, sends a professor for a half-year to five Western colleges: Beloit, Carleton, Colorado College, Grinnell, Knox, dividing the time equally among them; and each of them, in return, sends a member of its faculty to Harvard for a half-year, one-third of his time to be given to instruction, and the remainder to graduate or research work.

The sixth Harvard professor to offer work according to this plan, at Colorado College, is

JAMES HARDY ROPES, A.B., S.T.B., D.D.

Hollis Professor of Divinity.

Professor Warren Milton Persons, PH.D., *Professor of Economics and Finance*, is exchange professor at Harvard for the year 1916-'17.

Courses of Instruction

ART.

PROFESSOR SAHM.

- 1.**Ancient Art*.—A study of the architecture, sculpture, and painting of Egypt, Assyria, Greece, and Rome. Special stress will be laid on Greek art and its perfect expression of Greek ideals. Recitations and lectures. First half-year, 2 hours.
2. *Renaissance Art in Italy*.—Prerequisite, Art 1. A study of Italian Painting from the Early Christian period to the height of the Renaissance. The major part of the course will be devoted to the study of the great masters of the 15th and 16th Centuries in Florence, Rome and Venice. Recitations and lectures. Second half-year, 2 hours.
3. *The Art of Flanders and Holland*.—Prerequisite, Art 1. Flemish Painting from Van Eyck to Rubens and Van Dyck. The great Dutch painters of the 17th Century. Development of Portrait and Landscape Painting. Marine and Genre Painting. First half-year, 2 hours. Given in 1917-'18 and alternate years.
4. *The Art of Spain and France*.—Prerequisite, Art 1. Development of Spanish Painting under Italian and Flemish Influences. Velasquez and the Castilian School. Murillo and the Andalusian School. Survey of French Painting from the Early Renaissance through 17th Century Classic Art. Second half-year, 2 hours. Given in 1917-'18 and alternate years.
5. *German and English Art*.—Prerequisite, Art 1. The Great German Painters of the 15th and 16th Centuries. The Portrait Artists of England in the 18th Century. Later English Art. The Pre-Raphaelite Brotherhood. First half-year, 2 hours. Given in 1916-'17 and alternate years.
6. *Movements in 19th Century Art*.—Prerequisites, Art 1 and one other course. Summary and criticism of Modern Painting. Romanticism versus Classicism in French Art. The Barbizon School of Painters. Impressionism. Contemporary Painting in Europe. Brief Review of American Art. Second half-year, 2 hours. Given in 1916-'17 and alternate years.

*Open to Freshmen by special permission.

7. *Art Seminar*.—Prerequisites, Art 1 and one other of the courses offered. Discussion of æsthetic problems. Detailed analysis of important movements in art. Study of European art centers. Conferences, reports, bibliography. Second half-year, 2 hours.
8. *History of Architecture*.—A study of the development of historical styles from antiquity to modern times with emphasis upon the structural and æsthetic principles upon which art form is based. First half-year, 2 hours.
9. *Mediaeval Art*.—Prerequisites, Art 1 and one other course. An advanced course in the study of the Byzantine, Romanesque and Gothic periods in Italy, France, Germany and England, with special emphasis on Gothic architecture and sculpture in the 13th and 14th Centuries. Lectures and required readings. Second half-year, 2 hours.
10. *Greek and Roman Archaeology*.—Prerequisite, Art 1. An advanced course in Greek Vases, Greek and Roman Numismatics. First half-year, 2 hours.

NOTE.—For practical work and other lecture courses in art, see p. 106.

ASTRONOMY.

PROFESSOR ALBRIGHT.

1. *General Astronomy*.—Introductory and descriptive. First half-year, 3 hours. Offered in 1917-'18 and alternate years.
2. *Elementary Meteorology*.—First half-year, 3 hours. Offered in 1916-'17 and alternate years.
3. *Constellations*.—Study of the stars; chart making. Lectures and night work. Credit one hour. Given in 1916-'17.

NOTE.—For a course in *Field Astronomy*, see Civil 2, p. 58.

BIBLICAL LITERATURE AND APPLIED RELIGION.

PROFESSOR FALES.

18. *Biblical Introduction*.—A course covering such general information about the Bible as should be the possession of every student. A survey of the origin and contents of the various Bible books, especially with regard to their place in Hebrew or Christian history; including an analysis of the religious significance of the Prophetic and Priestly material, the Wisdom Literature, and the

Apostolic histories and epistles; and summarizing the story of the transmission of the Bible through the various translations, to the present time. Not open to Freshmen, except by special permission of the instructor. First half-year, 3 hours.

22. *Old Testament History and Literature*.—Prerequisite, Bible 18 or Bible 4. Hebrew history to the time of Christ, and its relation to that of the great ancient empires. Special reference to the stages of the development of Hebrew religion, as expressed in the various types of Old Testament and Apocryphal literature. Second half-year, 2 hours.
20. *The Life of Jesus*.—A course designed to give a unified impression of the events of Jesus' life, and of their significance as a foundation for Christian history. Primarily for Sophomores and Freshmen. First half-year, 2 hours.
19. *The Apostolic Age*.—Prerequisite, except for Seniors, either Bible 18, 4, 22 or 20. The beginnings of Christianity. Preliminary outlines of the condition of the Roman world, and of the life of Jesus, followed by a study of the rapid spread of the teachings of Jesus as applied by his first followers. Second half-year, 2 hours.
23. *The Principles of Christianity*.—Prerequisite, any one of the following: Bible 18, 4, 22, 20, 19, 15. The main Christian beliefs, and the various resulting Christian institutions, including some comparison of Christianity with the great ethnic religions. First half-year, 2 hours.
21. *Community Problems and Christian Teachings*.—A survey of existing agencies of Reform, Philanthropy, and Social Service, in various types of American communities, and the problems they are attempting to solve, including a study of the purpose, methods, and comparative effectiveness of the Christian Church. Second half-year, 2 hours.
24. *Seminar in Applied Religion*.—Discussions of the aims and methods of religious and other social service institutions. Required field-work, chosen by the student, investigations and reports. Adapted to those already engaged in some form of community service. Fortnightly meetings during the year. Credit one hour, each half-year. Either Bible 11 or Bible 21 is a prerequisite, unless one of them is taken in conjunction with this course. It may be taken by Seniors, upon special permission, as a half-year course, the first half-year only.

PROFESSOR PARSONS.

4. *The Prophets*.—The place of the prophets in the development of Hebrew History. Their manhood and their message. First half-year, 2 hours. Given in 1916-'17 and alternate years.
11. *The Social Message of Jesus*.—With special reference to its bearing on modern social problems. First half-year, 1 hour. Given in 1917-'18.
15. *Present Day Religious Problems*.—The modern attitude toward such questions as God, the Bible, Sin and Punishment, the Future Life, etc. Second half-year, 1 hour. Given in 1917-'18.

NOTE:—For other allied courses see: Greek 8, New Testament Greek; Economics 104, Problems in Sociology; Philosophy 12, Psychology of Religion; also Philosophy 3, and Economics 22.

BIOLOGY.

PROFESSOR SCHNEIDER, MR. BAKER, MISS LEWIS.

1. *General Biology*.—A general outline of the fundamental principles of Biology. Some topics considered are the origin of living matter, organization, growth and reproduction, differentiations, evolution.
 - (a) First half-year: *Plant Studies*.—In the laboratory a comparative study is made of the cryptogams, beginning with the simplest forms. This is followed by a study of the life history of the pine and a typical flowering plant.
 - (b) Second half-year: *Animal Studies*.—The laboratory work involves a study of representatives of the principal groups of animals.

Recitations or lectures, 3 hours; laboratory work 4 hours; credit 3 hours.

PROFESSOR SCHNEIDER, MISS LEWIS.

2. *Plant Physiology*.—Prerequisites, Biology 1, and one year of Chemistry. A laboratory, recitation, and lecture course on the functions of the organs of seed plants. Emphasis is placed upon composition and nutrition of plants, and the vegetable enzymes. First half-year, recitations or lectures 2 hours, laboratory work 4 hours, credit 3 hours. Given in 1917-'18 and alternate years.
3. *Botany of the Seed Plants*.—Prerequisite, Biology 1. Adaptations, migration, distribution, and successions are considered at length.

Opportunity is also given the student to become proficient in the determination of plant species among gymnosperms and angiosperms. Field excursions for the purpose of studying the local plant geography. Second half-year, recitations or lectures, 3 hours; field or laboratory work, 4 hours, credit 3 hours.

MISS LEWIS.

4. *Plant Histology*.—Prerequisite, Biology 1. This course, in addition to a study of plant structure, affords experience in the technic of microscopic preparations. The paraffin method, the celloidin method, the freezing method, the glycerine method, and free-hand sectioning are applied. First half-year, credit 2 or 3 hours (3 hours in the laboratory counting as 1 hour).
20. *Systematic Botany*.—Prerequisites, Biology 1 and 3. Some time will be spent on the pteridophytes and gymnosperms but most of the time will be given to the angiosperms. The evolution of the angiosperms will be taken up and all of the important families will be studied in detail. Second half-year, recitation or lecture 1 hour, field or laboratory work 3 hours, credit 2 hours.

PROFESSOR SCHNEIDER.

5. *Bacteriology*.—Prerequisite, Biology 1. Apparatus; culture media and methods of preparation; sterilization methods; microscopic characteristics of cultures of bacteria in general and of special forms, and methods of diagnosis; methods of obtaining pure cultures; methods of staining; bacteriological investigations of water, air, and soil. Students electing this course are expected to take Biology 6. Second half-year, lectures or recitations 2 hours, laboratory work 3 or 6 hours, credit 3 or 4 hours. Given in 1916-'17 and alternate years. Open to Juniors and Seniors.
6. *Sanitary Science and Public Health*.—A lecture course. Some of the topics discussed are: Death and its causes; classification of diseases; ancient and modern theories of disease; germ theory of infectious disease; direct causes and predisposing causes of disease; means of avoiding and resisting disease; vehicles of disease, such as dust, sewage, water, etc.; brief sketch of the important transmissible and epidemic diseases, prophylaxis etc. Each half-year, 1 hour.

7. *Physiology and Personal Hygiene*.—Prerequisite, Biology 1. Lectures, recitations, and demonstrations dealing with the structure and activities of the human body. Emphasis is placed upon hygienic problems. Each half-year, 3 hours.
 8. *Experimental Physiology*.—Prerequisites, Biology 1 and 7, and one year of Chemistry. Students are advised to elect this course with Biology 7. The experimental work covers the following subjects: The physiology of ciliary motion; the general physiology of muscle and nerve tissue; phenomena of circulation, with countings of the blood-corpuscles and estimation of hæmoglobin; respiratory exchanges, movements, etc.; digestion and absorption; physiology of the spinal cord and brain; of the cutaneous sensations, taste, smell, hearing, and vision. Each half-year, 3 hours in the laboratory, credit 1 hour.
 9. *Physiology*.—Prerequisites, Biology 1 and Chemistry 2. This course is adapted to the needs of the student planning to study medicine. Each half-year, recitations or lectures, 3 hours; laboratory work 5 hours, credit 4 hours.
 18. *Evolution*.—Prerequisite, Biology 1. The history of the theory; the evidences for descent; the theories of species-forming, with a study of statistical and experimental evidence. First half-year, 3 hours. Given in 1916-'17 and alternate years. Open to Juniors and Seniors.
- MR. BAKER.
10. *Invertebrate Morphology*.—Prerequisite, Biology 1. A study is made of the advance in specialization from the Protozoa to the Vertebrates. Types of the more important groups are studied in the laboratory. This course is especially recommended for those intending to teach Biology. First half-year, lectures or recitations 2 hours, laboratory work 4 hours, credit 3 hours. Given in 1917-'18 and alternate years.
 15. *Comparative Anatomy of Vertebrates*.—Prerequisite, Biology 1. A comparative study of vertebrate structure. Dissections are made of the Amphioxus, Necturus, the shark's head, and a mammal. Second half-year, lectures 2 hours, laboratory work 4 hours, credit 3 hours.
 11. *Histology*.—Prerequisite, Biology 1. A comparative detailed study of the tissues of the higher animals. Preparations of the principal tissues and organs are made and the common methods of

preparation and mounting studied. Special microscopic drill is given in distinguishing the different tissues and organs. First half-year, recitations 2 hours, laboratory work 4 hours, credit 3 hours. Given in 1917-'18 and alternate years.

12. *Embryology and Cytology*.—Prerequisite, Biology 1. A study of maturation, fertilization and cleavage of the ovum, early stages of the embryology of the chick and pig. Special attention is given to the differentiation and development of tissues and organs. Students make most of their own preparations. Second half-year, recitations or lectures 2 hours, laboratory work 4 hours, credit 3 hours. Given in 1917-'18 and alternate years.
14. *History of Biology*.—Prerequisite, Biology 1. A study of the lives and work of the more important men who have shaped biological thought and of the development of the latter. Recitations, lectures, and assigned readings. Second half-year, 2 hours. Given in 1916-'17 and alternate years.
13. *Entomology*.—A study of the kinds, structure and life histories of insects, with some reference to the detrimental and useful forms. A collection of local forms will be made and identified and a study of their habits will be carried on in the field. First half-year, lectures 2 hours, field and laboratory work 4 hours, credit 3 hours. Given in 1916-'17 and alternate years.
16. *Animal Distribution*.—Prerequisite, Biology 1. Lectures, assigned readings, and laboratory and field study. An attempt will be made, during the early portion of the half-year, to study the different local forms, both in the field and in the laboratory, and to outline the fundamental principles of Animal Ecology. After cold weather begins, the time will be spent on Zoogeography, the distribution of animals throughout the world. First half-year, lectures two hours, laboratory or field work 4 hours, credit 3 hours. Given in 1916-'17 and alternate years.

LABORATORY FEES.

Course 1, 2, 4, 10, 11, 12, 13, or 15.....	\$3.00
Course 3 or 16.....	1.50
Course 5 or 9.....	6.00
Course 8.....	4.00

BUSINESS ADMINISTRATION AND BANKING.†

PROFESSOR PERSONS, ASSISTANT PROFESSOR BLUM, ASSISTANT PROFESSOR WINSTON, MR. ELLINGWOOD AND MR. KLAHR.

12. *Mathematical Theory of Investments*.—A course covering progressions, limits, and series, logarithms, graphic representation, interest, annuities, amortization, valuation of bonds, sinking funds and depreciation, theory of probability, life annuities and the elements of life insurance. Prerequisite, Mathematics 1. Second half-year, 3 hours.

1. *The Theory and Practice of Accounting*.

(a) Double-entry drills, modern forms of accounting and practice in the use of essential books. Business forms, methods, and documents such as drafts, notes, and bills of lading.

(b) Partnership and corporation accounts, analysis of classified statements, manufacturing and trading accounts. Accounting procedure. Not open to Freshmen. Each half-year, 3 hours.

14. *Advanced Accounting*.—Amortization and depreciation accounts, annuities, cost accounting, auditing and advanced accounting procedure. Prerequisite, Business 1. Second half-year, 2 hours.

3.**Commerce and Industries*.—Prerequisite, Economics 21. After a survey of the development and status of foreign industries, natural resources and the expansion of commerce, a special study is made of the principal articles which enter into American commerce. Resources, industries, and trade currents are treated. Second half-year, 3 hours.

4.**Corporation Finance and Industrial Organization*.—Historical development and analysis of the different forms of industrial organization, including the partnership, joint-stock company, and the corporation, and the later developments, such as the pool, trust, combination, and holding company. Elements of corporation finance, with special reference to organization and management. The evils of corporate organization, such as fraudulent promotion, over-capitalization, and manipulation. Public policy toward corporations, with special refer-

†NOTE.—Of the courses listed above, only Business 4 and 7 will count toward a major in Economics.

*Prerequisite, Economics 1.

ence to taxation. A brief consideration of public-service corporations with special reference to municipal utilities. First half-year, 3 hours.

5. *Commercial Law* (First year).—The first half-year will be given to the study of the general law of contracts. In the second half-year, a more detailed study will be made of Negotiable Instruments, Sales, and Bailments. Open only to Juniors and Seniors. Each half-year, 3 hours.
13. *Commercial Law* (Second year).—First half-year: Carriers, Insurance, Guaranty and Suretyship, Agency. Second half-year: Partnership, Corporations, and an introduction to the law of property with emphasis upon the law of decedents' estates. Prerequisite, Business 5. Each half-year, 2 hours.
- 6.**Business Organization and Management*.—An intensive study of the principles and mechanism of organization and management, with special emphasis on the following phases: the general institutions and forms of management; the determination and direction of operations; the plant, its site, construction and adaptation to the business; purchasing; the custody and treatment of stores and stock; the selection, care, and maintenance of tools and machinery; the selection, treatment, and payment of labor; selling and the organization and management of the sales force; credit and collections; advertising. Various types of business—retail, wholesale, and manufacturing—are considered, and a careful study is made of the principles of Scientific Management. Prerequisite, Business 1. Second half-year, 3 hours.
- 7.**Transportation*.—Steam Railways. (a) The railway problem of the United States, including theories of rates, combination and pooling, consolidation, community of ownership, and government ownership or control, involving a careful consideration of the work of the Interstate Commerce Commission and of State commissions. (b) A comparative study of the railway systems of other countries, especially England, Germany, France, Canada, and the Australian Commonwealth, with a consideration of the economic significance of the world's great railway systems.

Transportation and communication other than by steam railways. (a) Lake, river, and canal transportation in the

*Prerequisite, Economics 1.

United States and other countries. (b) Ocean transportation with special reference to its relation to the transportation systems of various countries. (c) Interurban railways and their growing competitive power, telegraphs, telephones, and cables. First half-year, 3 hours.

9. **Banking Practice*.—Outline of the work of commercial, savings and financial banks and trust companies. The nature of investments of the different institutions. The federal reserve system and its functions. The nature of the demand for credit and currency. The documents used in foreign exchange. Commercial and travelers' credits. Currency movements and their causes. Parity sheets and the method of computation of parities. Prerequisite, Economics 9. First half-year, 3 hours.

10. **Investments and Speculation*.—Investment Banking. Speculation and the organized exchanges. A study of the phenomena connected with business prosperity and depression, industrial crises and financial panics. History and theory of business cycles. Effects of business cycles on investments, speculation and business enterprise. Prerequisite, Business 9. Second half-year, 3 hours.

15. **Relation of Legislation to Economics*.—First half-year, 2 hours. Study of the Police Power. The law of conspiracy with special reference to the trade union. The interpretation of the Anti-trust laws. The power of commissions and boards to regulate business.

CHEMISTRY.

PROFESSOR STRIEBY.

2. *Advanced Chemistry*.—The lectures treat chiefly of Inorganic Chemistry, but half of the second semester is given to Organic Chemistry. Emphasis is placed on the principles of chemical science, the chemical laws and their methods of deduction, structural formulæ, chemical reactions and stoichiometry. The applications of chemistry to the arts, to sanitary science and to common uses, are made prominent. Abstracts from books or descriptions of observed processes are required in each semester. The laboratory work affords a practical introduction to the qualitative analysis of common acids and bases, and also gives

*Prerequisite, Economics 1.

limited practice with balances and burettes in exact quantitative determinations by gravimetric methods and with standard solutions. (Gas determinations and partial analysis of water is also included.) Engineering students will be given instruction in the theory and practical work of fuel sampling and analysis, flue gas analysis, and boiler water analysis, in addition to the regular work of Chemistry 2. Each half-year, recitations or lectures 3 hours, laboratory work 4 hours, credit 3 hours.

5. *Organic Chemistry*.—Prerequisite, Chemistry 2. Remsen's *Organic Chemistry*. Recitations, lectures and discussions of special subjects and processes. Each half-year, recitations 3 hours, laboratory work, 4 hours, credit 3 hours.
6. *Theoretical Chemistry*.—Prerequisite, Chemistry 2. Text-book work with lectures and oral and written discussions. Each half-year, 3 hours.
7. *Medical Chemistry*.—Prerequisite, Chemistry 2. Lectures, text-book, assigned reading, and laboratory work. The study is mainly of substances, inorganic and organic, that are of importance, in medical science and hygiene. Special attention is devoted to the examination of carbohydrates, proteins, fats, blood, milk, urine, and digestive agents. The needful gravimetric determinations, considerable volumetric work with burettes and standard solutions, and microscopic and spectroscopic tests, supplement the usual qualitative examinations. Hawk's *Physiological Chemistry*. Each half-year, recitations, 4 hours, laboratory work, 8 hours, credit 4 hours.

MR. LOVE.

1. *Elementary Chemistry*.—Text-book work (chiefly Inorganic Chemistry) supplemented by lectures and discussions upon the fundamental laws, the application of chemistry to sanitary science, medicine, and some of the arts, and also by occasional papers from descriptions in technical books, and by reports of visits to metallurgical and manufacturing establishments. Remsen's *College Chemistry*. Each half-year, recitations 3 hours, laboratory work 4 hours, credit 3 hours.
3. *Qualitative Analysis*.—Prerequisite, Chemistry 2 or equivalent. Required of all majors in Chemistry. Experimental drill in obtaining characteristic reactions of the more common elements, study of empirical formulæ and symbolic expression of reactions,

solution of substances, separation of groups and elements, and analysis of simple salts and of complex mixtures and alloys. The laboratory work deals mainly with inorganic substances. The lectures, given two hours per week during the first quarter, take up the laboratory work in detail. First half-year, laboratory work 8 hours, credit 4 hours.

4. *Quantitative Analysis*.—Comprises one full year's work. 4*a* begins in January, 4*b* in September.

(*a*) Prerequisite, Chemistry 3. Required of all majors in Chemistry. The laboratory work begins with the determination of single elements by approved Gravimetric and Volumetric methods. This is followed by the Proximate analysis of coal with its calorific power, limestone, boiler water and flue gas analysis. The lectures treat of the methods of analysis, properties of precipitates, stoichiometry, sampling, reporting, and the theory of solutions. One half-year, recitations 1 or 2 hours, laboratory work 8 hours, credit 4 hours.

(*b*) Prerequisite, completion of 4*a*. The laboratory work and lectures are continuations of 4*a*, taking up the analysis of iron, copper, manganese, zinc and lead ores; a complete feldspar analysis; and determinations of sulphur and silicon in steel and pig iron. One half-year, recitations 1 hour, laboratory work 12 hours, credit 5 hours.

8. *Agricultural Chemistry*.—Prerequisite, Chemistry 4*a*. A study of soils, fertilizers, and foods; the analysis of soils, manures, and dairy products. Each half-year, recitations 1 hour, laboratory work 5 hours, credit 3 hours.

9. *Assaying*.—Prerequisite, Chemistry 4*a* and 4*b*. Sampling and assaying of gold, silver, copper, and lead ores, mattes and bullions. Lectures and laboratory practice. Second half-year, recitations 1 hour, laboratory work three 4-hour periods, credit 4 hours.

The fee for every course must be paid in advance. It covers the cost of gas, chemicals, and non-returnable supplies, except platinum. Glassware and necessary apparatus (except platinum vessels) are loaned to the student and must be returned in good condition. A deposit generally sufficient to cover the cost of breakage and injury to the apparatus loaned to the student, must be made in advance of all lab-

oratory work. An increase of this deposit may be required at any time should the need for it arise. All excess of the deposit over the cost of breakage and charges will be remitted to the student if, before the close of the year, he returns the apparatus in suitable condition for reissue. The fees are as follows:

Course 1, each year's work	Fee, \$ 7.00; Deposit, \$2.00
Course 2, " " " " " " " " " " " "	8.00; " 2.50
Course 3 or 4, each year's work . . . " " " " " " " " " "	15.00; " 3.50
Course 5 or 7, " " " " " " " " " " " "	15.00; " 3.50
Course 8, " " " " " " " " " " " "	10.00; " 2.50
Course 9, " " " " " " " " " " " "	20.00; " 2.00

No portion of the fee can be returned to any student who drops his course later than the first of December.

CIVIL AND IRRIGATION ENGINEERING.

ASSISTANT PROFESSOR OKEY, PROFESSOR ALBRIGHT.

1. *Theory and Practice of Surveying*.—Mathematics 3 must precede or accompany this course. Construction, use, and adjustment of instruments; pacing, use of chain, compass, level, and transit; contouring and leveling by hand; cross-sections; azimuth traverse; balancing survey; computation of areas and volumes; mapping. Second half-year, 2 hours. *Required of Civil Engineers and Foresters in the Freshman year.*
2. *Field Astronomy*.—Prerequisite, Civil Engineering 1, Civil Engineering 201. The practical application of astronomy to the problems of surveying. Determination of latitude, longitude, azimuth, and time by means of the sextant, engineer's transit, and chronometer. Second half, Sophomore year. Two recitations, three hours' field work, credit 3 hours. *Required of Civil Engineers.* Fee, \$2.00.
5. *Advanced Surveying*.—Continuation of Course 1. Topographic surveying; stadia measurements, plane table; hydrographic surveying; city surveying; geodetic surveying. Recitations, lectures, and assigned reading. The field work problems are assigned on the basis of the student's previous field experience. The following surveys and maps are required: Transit and stadia topography; plane table topography; repetition traverse; reservoir site; street grades; city subdivision; hydrographic survey; triangulation survey. Students seeking advanced credit in surveying must present notebook covering the work for

which credit is sought. First half-year, 2 hours. *Required of Civil Engineers in the Junior year, and of Foresters in the Sophomore year.*

7. *Elementary Plane Surveying*.—A course in the use and adjustment of instruments for Electrical Engineers. The course is designed to give a general idea of surveying methods and the use of simple surveying instruments. It is necessarily elementary in character and restricted in scope. Second half, Junior year, three hours' field work, credit 1 hour. *Open only to Junior Electrical Engineers.* Fee \$2.00.

ASSISTANT PROFESSOR OKEY AND ASSISTANTS.

20. *Railway Curves*.—Theory of simple, compound, and transition curves, vertical curves, frogs, switches, and crossings. Recitations, field work, lectures, and problems. First half, Junior year, 2 hours. *Required of Civil Engineers.*
21. *Railway Engineering*.—Reconnaissance; preliminary survey; maps and profiles; location; cross-sections; earthwork computations; mass diagram; yard layouts for freight and passenger use; construction of wooden trestles and masonry culverts; tunnels; track; ordinary and extraordinary methods of drainage; water supply, its quality, storage, and delivery; preservation of timber; block signals; general maintenance. The field work of this course involves the location and cross-sectioning of a short railroad line, together with the preparation of maps, profiles and estimates necessary to put it under construction. Second half, Junior year, 3 hours. *Required of Civil Engineers.*
22. *Railway Economics*.—Sources and value of train resistance; the relation of curvature and grades to velocity and maximum train load; effect of momentum; balance of grades for unequal traffic; analysis of operating expenses; cost of extra distance, curvature, rise and fall, and of additional trains; effect of roadbed on cost of running trains; pusher grades; value of additional traffic; improvement of old lines; standard plans; estimates of cost. Lectures, recitations, problems. First half, Senior year, credit 2 hours. *Required of Civil Engineers.*

ASSISTANT PROFESSOR OKEY, ASSISTANT PROFESSOR MOORE.

31. *Masonry*.—Cement, concrete, and masonry; stone and brick, requisites, tests, durability, classifications, and specifications; stone-cutting, quarrying, dressing and bedding; manufacture

of brick; composition and manufacture of limes and cements; their requisites, tests, specifications, preservation and use; natural and Portland cements, sand, gravel, broken stone; proportions and quantities of concretes; economic proportions; concrete mixing and depositing; artificial stones; preservations; methods of quarrying; drilling, channeling, and wedging, use of explosives; classification and specifications of stone and brick masonry; measurements and cost; strength and durability; safe loads on masonry. Recitations, lectures, and notes. First half, Junior year, 2 hours. *Required of Civil and Irrigation Engineers.*

32. *Reinforced Concrete*.—Properties of concrete and steel; theoretical proportioning of concrete; concrete and steel in combination; temperature stresses; theory and design of rectangular beams, slabs, cross beams, girders, columns, arches and retaining walls; theory of bending and direct stresses; use of slab, beam, and column tables and diagrams; complete design and detailed drawings of a reinforced concrete girder bridge, and a six-story reinforced concrete building. Recitations, lectures, assigned readings, problems and design work in the drafting room. First half, Senior year, 2 hours. *Required of Civil and Irrigation Engineers.*

33. *Foundations*.—Foundations of steel grillage and of concrete-steel for buildings; safe loads on masonry and foundation beds; examinations of foundation sites; pile driving and pile foundations; sheet-piling and coffer-dam methods; pneumatic foundations and caisson work; open dredging; bridge piers of masonry and steel; deep foundations; sub-aqueous tunneling. Recitations and design work. First half, Senior year, 2 hours. *Required of Civil and Irrigation Engineers.*

ASSISTANT PROFESSOR OKEY AND ASSISTANTS.

41. *Hydraulics*.—Flow of water through orifices; time required for discharge of canal locks and similar volumes; weir discharge and gauging by weirs; gauging of water for irrigating systems; flow through pipes; design of pipe systems; the Venturi meter; flow and discharge of open canals and rivers; principles of impulse and of reaction water wheels. First half-year, 2 hours. Recitations and problem work. *Required of all Junior Engineers.*

42. *Hydraulic Laboratory*.—Application in the laboratory of the principles and theory studied in Course 41. First half, Junior year, laboratory 3 hours, credit 1 hour. Open to those who have registered in Course 41. *Required of Junior Civil Engineers*. Fee, \$3.00.
43. *Hydraulic Engineering*.—Continuation of Course 41. Collection and storage of water; analysis of hydrographic data with particular reference to Colorado and other Western states; hydraulic motors; design of hydro-electric power plants. Recitations, lectures, and assigned reading. Credit 2 hours. *Required of Senior Irrigation and Electrical Engineers*.

ASSISTANT PROFESSOR OKEY.

51. *Irrigation Engineering*.—Irrigation of land; amounts and periods of application; grades, cross-section, and capacity of canals; surveys for irrigation works; source of water supply; hydrographic data; Colorado streams; return of seepage waters; irrigation by pumping. Lectures, recitations, design work, and assigned reading. Second half, Senior year, 3 hours. *Required of Senior Civil Engineers and of Junior Irrigation Engineers*.
61. *Water Supply*.—Rainfall and storage; flow of streams; influence of soils, elevation and geologic characteristics of water-shed; methods of supply; underground flow; reservoir construction; distributing systems; house-supply and wastage; water purification; sand filters, design and construction of water supply system for typical town; maintenance, and office records. Recitations, lectures, collateral reading, and design work. First half, Senior year, 3 hours. *Required of Civil and Irrigation Engineers*.
62. *Sanitary Engineering*.—Treatment and disposal of sewage and refuse by sedimentation, precipitation, and use of septic tanks; treatment of effluence by continuous and intermittent sand filtration; fertilization; disposal of sludge; sewage and surface drainage of cities and towns; separate and combined systems of sewers; capacity of mains and branches; catch-basins, manholes; flush-tanks; outfalls; grades and sections; flow and discharge of sewers; construction. Lectures, recitations, and assigned readings. Second half, Senior year, 2 hours. *Required of Civil and Irrigation Engineers*.

71. *Roads, Pavements and Parks*.—Surveys and locations; drainage and grades; foundations; selection and treatment of materials; maintenance of roads and pavements; design, construction, and maintenance of parks and parkways. Lectures, recitations, and assigned readings. Second half, Senior year, 2 hours. *Required of Civil Engineers.*

ASSISTANT PROFESSOR OKEY AND ASSISTANTS.

81. *Resistance of Materials*.—Laws of elasticity in homogeneous materials; coefficients of elasticity; relations between stresses and strains; common theory of torsion and flexure; elastic limits, working stresses and ultimate resistance of wrought iron, cast iron, steel, alloys, timber, simple and continuous beams; design and construction of iron, steel, and timber columns and beams; shafts; cables; specifications. First half-year, 3 hours; second half-year, 2 hours. *Required of all Junior Engineers.*
82. *Testing Laboratory*.—Tests of the materials of construction, including steel, wrought iron, cast iron, brick, stone, cement, concrete, and timber. Each student is required to make individual tests and reports. Second half-year, one 3-hour laboratory period per week, credit 1 hour. *Required of all Junior Engineers.* Fee, \$4.00.
83. *Stresses*.—The truss element; simple non-continuous trusses with parallel chords; fixed and moving loads; through and deck spans; position of any system of concentrated moving loads for greatest chord and web stresses; combination of analytical and graphic methods; application to bridge and roof trusses; arched ribs. Two recitations, three hours in drafting room, with problems; lectures. Second half, Junior year, credit 3 hours. *Required of Civil Engineers.*
84. *Bridge Design*.—Railway and highway bridges; pin and riveted connections; the design of details for bridges, roofs and buildings; floors for buildings and railway and highway bridges; wind loads and stresses; complete designs and detail drawings of a roof truss, a deck plate girder, a riveted pony highway truss, and a through pin connected railway truss. Lectures on modern shop and drafting room practice. First half-year, two recitations and three hours in the drafting room; second half-year, two recitations and six hours in the drafting room. Throughout the Senior year. Credit, first half-year, 3 hours; second half-year, 4 hours. *Required of Civil Engineers.*

- 201.**Field Practice in Plane Surveying*.—Prerequisite, Civil 1, Graphics 1. Four weeks in Manitou Park, between the Freshman and the Sophomore years. Credit 4 hours. *Required of Civil and Irrigation Engineers, and Foresters.* Fee, \$10.00.
- 211.**Field Practice in Advanced Surveying*.—Prerequisite, Civil 5, Forester's Course. Credit 4 hours. Four weeks in Manitou Park. *Required of Foresters.* Fee, \$10.00.
- 221.**Railway Field Work*.—Prerequisite, Civil 21. Two weeks in Manitou Park, between the Junior and the Senior years. Credit 2 hours. *Required of Civil Engineers.*
- 241.**Field Practice in Hydrographic and Mineral Land Surveying*.—Two weeks in Manitou Park, between the Junior and the Senior years. Credit 2 hours. *Required of Civil Engineers.* Fee for Courses 221 and 241 together is \$10.00.
- 251.**Field Practice in Irrigation Surveying*.—Prerequisite, Civil 5. Four weeks in Manitou Park, between Junior and Senior years. Credit 4 hours. *Required of Irrigation Engineers.* Fee, \$10.00.

ECONOMICS AND SOCIOLOGY.†

PROFESSOR PERSONS, ASSISTANT PROFESSOR BLUM AND
ASSISTANT PROFESSOR WINSTON.

1. *Principles of Economics*.—A general survey based upon the study and discussion of a text-book giving the currently accepted scientific analysis of industrial society, supplemented by lectures and assigned readings on current economic problems. The purpose of the course is to teach fundamental principles, to open the field of economics in the way most helpful to further more detailed study of special problems, and to give to those who intend to adopt business, law, or journalism, the general rules and principles contributed to business by the science of economics. Not open to Freshmen. Each half-year, 3 hours.
21. *Commercial Development*.—The history of intersectional and international commerce. The organization of industry in Europe and the United States. Emphasis on the period 1750-1850. Economics 1 must precede or accompany this course. First half-year, 3 hours.

*Given at Manitou Park during June and July.

†NOTE:—All of the courses listed above in Economics and Sociology count toward a major in Economics. Other courses, to count as part of the thirty hours required to make a major, must be approved by the professor under whom the major is taken.

- 2.**Advanced Economic Theory*.—A study of the history of economic thought since the time of Adam Smith, with special reference to the economic conditions which influenced those theories. The latter part of the course will be devoted to an examination of modern theories of distribution. Second half-year, 3 hours. Given in 1917-'18 and alternate years.
- 9.**Money and Banking*.—The history and theory of money, credit, and banking. The evolution of metallic currency; the position of the bimetallists and the quantity theorists, credit, credit instruments, paper money, convertible and inconvertible notes, modern currency problems, and foreign banking systems are studied with special reference to American currency and banking. Discussions of current topics and statistics relating to money, banking, domestic and foreign commerce and exchange, price movements, etc. Students will be expected to subscribe to a standard financial journal. Second half-year, 3 hours.
- 10.**Public Finance*.—A survey of the whole field of public finance, including (a) public revenues, their nature, classification and characteristics, with special emphasis on taxation; (b) public expenditures, their classification and relation to public welfare and to governmental functions; (c) the budget and its preparation in the great countries of the world; (d) public credit, its nature, employment, industrial effects, and administration. Second half-year, 3 hours. Given in 1916-'17 and alternate years.
- 18.**Statistics*.—The history, theory and methods of statistics. The making of schedules; the collection and tabulation of data; averages; graphic representation; frequency tables and curves; correlation; interpolation, etc. Second half-year, 3 hours.
- 19.**Insurance*.—The theory of insurance; the development of insurance companies; the various systems of insurance; company management. The mathematics of compound interest, including annuities certain. The theory of probabilities as applied to the construction of mortality tables; the computation of reserve, surplus, premiums, endowments, dividends, etc., for life insurance. First half-year, 3 hours. Given in 1917-'18 and alternate years.

*Prerequisite, Economics 1.

- 22.**Labor Problems and Socialism*.—Present day labor problems connected with trade and industrial unions, wages, unemployment, efficiency, political action and theories, conciliation, and arbitration. The history of the labor movement during the period 1750 to date. Second half-year, 3 hours. Given in 1917-'18 and alternate years.
- 101.**Principles of Sociology*.—In this course an attempt is made to formulate the fundamental laws of association, with special reference to their relation to social progress. Such topics as the influence of the physical environment, natural selection, warfare, division of labor, sex and sexual selection, heredity, imitation, social oppositions, art, science and religion, will be discussed with reference to their effects on social progress. First half-year, 3 hours.
- 104.**Problems in Sociology*.—A study of particular social problems, including suicide, the liquor problem, divorce, immigration, poverty, crime, etc. Second half-year, 3 hours. Given in 1916-'17 and alternate years.

EDUCATION.

[Education courses are open to Juniors and Seniors only.]

PROFESSOR BREITWIESER.

3. *Mental Development*.—Kirkpatrick's *Fundamentals of Child Study* and his *Genetic Psychology* are used as a point of departure. Class reports and discussions. First half-year, 2 hours.
4. *Educational Psychology*.—A study of the psychology of pupils in the schools, adolescence, sex, deficient children, environment, and heredity. Second half-year, 2 hours.
6. *Practice Teaching*.—This course meets the requirements of the State Board of Examiners concerning Practice Teaching. Provision is made for practice teaching in both primary and secondary grades. An examination in the common branches will be required, except for those who hold a second grade certificate. Either half-year, 4 hours.

PROFESSOR BREITWIESER AND MR. GERLACH.

5. *Research Work in Problems of Educational Psychology*.—For graduate students and advanced undergraduates. Hours to be

*Prerequisite, Economics 1.

arranged. This course gives an excellent opportunity for candidates for the A. M. degree to combine that work with practical work in the Colorado Springs schools.

MR. GERLACH.

1. *History of Education*.—A study of the more important educational theories and movements in their larger relationships. The historical problems are treated as far as possible from the standpoint of social psychology, and their relation to present day questions is emphasized. Graves' *History of Education* is used as a basis. First half-year, 2 hours.
2. *Modern Educational Development*.—A continuation of the History of Education in which emphasis is put upon the movements affecting present systems. Readings from current educational literature. Second half-year, 2 hours.
7. *School Problems*.—This course is designed to give practical instruction to those who expect to teach. Reports, discussions, and lectures will be given on school organization, management, teaching, etc. Second half-year, 3 hours.
9. *Principles of Education*.—Fundamentals which underlie the educative process are discussed. The curriculum, aims, values, agencies, and internal development are taken up in an attempt to place education upon a scientific basis. Bolton's *Principles of Education* will be used. First half-year, 3 hours.

NOTE 1.—The opportunities for practice teaching are made possible by the generous coöperation of the officers and teachers of the public school systems of Colorado Springs and Colorado City, and of the San Luis School.

NOTE 2.—For courses in other departments intended especially for teachers, see Greek 7, Latin 8, English 25, German 12, History 22, Spanish 10, Mathematics 7, Physics 7.

ELECTRICAL ENGINEERING.*

PROFESSOR THOMAS AND MR. LOVE.

1. *Elements of Electrical Engineering*.—A theoretical course covering the fundamental principles of direct currents and their application in direct current machinery. The text used is Langsdorf's *Principles of Direct Current Machines*, and is supplemented

*Laboratory Fees: See footnote, p. 69.

by lectures and assigned work in Lyon's *Problems in Electrical Engineering*. *Required of Electrical Engineers*. First half, Junior year, credit 4 hours.

2. *Alternating-Current Theory*.—Prerequisite, Electrical Engineering 1. A continuation of Electrical 1, taking up alternating current theory and application in alternating current circuits. Texts: Drysdale's *The Foundations of Alternate Current Theory*, and Lyon's *Problems in Electrical Engineering*. The text-book work is supplemented by lectures. *Required of Electrical Engineers*. Second half, Junior year, credit 3 hours.
3. *Advanced Electrical Laboratory*.—Magnetic measurements, the measurement of conductivity and insulation resistance, the calibration of direct-current instruments and tests such as the location of faults in telephone circuits, etc. First half, Junior year, two 3-hour periods, credit 2 hours.
4. *Alternating-Current Measurements*.—Prerequisite, Electrical Engineering 2. The calibration of commercial alternating-current instruments for the measurement of current, electromotive force, and power. Also studies of the instrument transformer, phase and frequency meters, and of inductance, effective resistance, and resonance. The measurement of power and the phase relations of polyphase circuits. First half, Senior year, one 3-hour period, credit 1 hour.
5. *Alternating-Current Machinery*.—Prerequisite, Electrical Engineering 1 and 2. A lecture course on alternating current machinery, including generators, motors, converters, and transformers. The lectures are supplemented with problem work and assigned reading in Lawrence's *Principles of Alternating-Current Machinery*. McAllister, Karapetoff, Steinmetz, and the technical press. *Required of Senior Electrical Engineers*. Throughout the Senior year. 3 hours each half-year.
6. *Electrical Measuring Instruments*.—A course of study in the theory of various direct-current measuring instruments, including those used in Electrical 3. Text: *Electrical Meterman's Handbook*, published by the National Electric Light Association. The text is supplemented by lectures. Second half, Junior year, 1 hour.
7. *Alternating-Current Instruments*.—The theory of various types of alternating-current measuring instruments, including the instruments used in Electrical 4. A continuation of Electrical 6, using the same text. First half, Senior year, 1 hour.

8. *Direct-Current Electrical Engineering Laboratory*.—Prerequisite, Electrical Engineering 1. The work of this course includes the ordinary tests of direct-current machinery, such as efficiency by brake for motors, by loading for generators, and by the stray-power method, heat runs, regulation and parallel running, and the analysis of losses. Each student presents a carefully prepared preliminary report covering the theory of the experiment and the method of procedure, which is corrected and must be approved before the experiment may be performed. Each student also presents a final report which in addition to the working up of the experiment includes an analytical discussion of the experiment and its results. Equivalent to Physics 14. Second half, Junior year, one afternoon for preliminary reports and one 3-hour laboratory period, credit 3 hours.
9. *Electrical Distribution*.—Prerequisites, Electrical Engineering 1 and 2. A lecture course dealing with commercial and technical features of the generation, distribution, and consumption of electrical energy. First half, Senior year, 2 hours.
10. *Electrical Engineering*.—Prerequisite, Electrical Engineering 9. A lecture course dealing with some of the problems and systems of long-distance, high-tension transmission and electric traction. This lecture course is supplemented with problems. In the last part of the term, Steinmetz's *Transient Electric Phenomena* is used as a text. Second half, Senior year, 2 hours.
11. *Alternating-Current Electrical Engineering Laboratory*.—Electrical Engineering 5 must precede or accompany this course. The work of this course includes such tests as regulation from open and short-circuit characteristics, regulation and efficiency by loading, efficiency by the retardation method of analyzing losses, and the parallel operation of alternators; synchronous motor tests, induction motor tests, and tests of the losses and regulation of transformers, both by loading and by "loading back." Throughout the Senior year. One afternoon for preliminary reports, and one afternoon laboratory period, each half-year, credit 3 hours.
12. *Dynamo Design*.—Prerequisites, Electrical Engineering 1 and 2. A lecture and class room course, considering the materials of construction, armature windings, and the principles of calculation in the design of direct-current machines and transformers. Text: Gray's *Electrical Machine Design*. First half, Senior year, 1 hour.

13. *Electrical References*.—A course of reference work in connection with the important articles in the current technical and scientific periodicals. Assigned readings and abstracts. Throughout the Senior year. Each half-year, 1 hour.
14. *Electrical Engineering for Civil and Mining Engineers*.—This course, required of all engineers except Electrical Engineers, is given throughout the Senior year. It covers the principles of both direct and alternating currents and their application in machines and transmission. Text: Gray's *Principles and Practice of Electrical Engineering*. Each half-year, 3 hours.
15. *Power Plants*.—A study of steam boilers, reciprocating engines and their valve gears, and turbines. The construction, operation, and testing of the machines and their auxiliaries, and the conditions affecting their economical use are considered in detail. Lectures, problems, and assignments in Hutton's *Mechanical Engineering of Power Plants*. Required of all Engineers. Second half, Junior year, 2 hours.
16. *Thermodynamics*.—A study of the principles and concepts of thermodynamics which are essential to the study of the construction and operation of the steam engine, steam turbine, air compressor, gas engine, and their auxiliaries. Text: Moyer and Calderwood's *Engineering Thermodynamics*. Required of all Engineers. First half, Junior year, 2 hours.
17. *Engineering Inspections*.—An excursion course designed to acquaint the student with modern practice in electrical and mechanical engineering by visiting power and manufacturing plants. Four or five days are spent each year on one of these trips. One trip is to Denver and vicinity and the alternate trip includes Pueblo, Cañon City, and the Cripple Creek District. A written report on each trip is required. Required of Junior and Senior Electrical Engineers. Credit 1 hour for both trips.

Laboratory Fees per half-year: Electrical Engineering 4, \$3.00; Electrical Engineering 3, \$4.00; Electrical Engineering 8 and 11, \$5.00.

ENGLISH.

Group I. Required Courses.

1. *Rhetoric and Composition*.—Elementary Course. Readings, chosen to represent the principal literary types. Required of all Freshmen. Each half-year, 3 hours.—PROFESSORS WOODBRIDGE, MOTTEN, AND NOYES; MR. WATSON.

2. *The Greek Epic*.—A course designed to provide a foundation for later literary studies. Lang, Leaf and Myers' *Iliad* and Palmer's *Odyssey* are used. Frequent themes. Required of all Sophomores who are candidates for the degree of A.B., except those in the Department of Business Administration and Banking. First half-year, 3 hours.—PROFESSORS WOODBRIDGE AND NOYES.
 31. *Business English*.—Weekly themes. Supplementary reading. Required course for Sophomores in the Department of Business Administration and Banking. First half-year, 3 hours.—PROFESSOR MOTTEN.
- Group II. Optional Courses. All candidates for the degree of A.B. must take one course in this group. Courses 4 and 5 are open to all students; courses 9, 12, 16, 17 and 19 are open only to Sophomores, Juniors and Seniors; course 13 is open only to Juniors and Seniors.
4. *American Literature*.—Irving, Cooper, Poe, Bryant, Hawthorne, Longfellow, Emerson, Lowell, Holmes, Whittier. Second half-year, 3 hours. Given in 1916-'17 and alternate years.—PROFESSOR PARSONS.
 5. *Outline History of English Literature*.—Each half-year, 2 hours. Given in 1917-'18 and alternate years.—PROFESSOR PARSONS.
 9. *Shakespeare*.—The principal plays read chronologically. Second half-year, 3 hours. Given in 1917-'18 and alternate years.—PROFESSOR PARSONS.
 12. *English Poetry from Dryden to Burns*.—First half-year, 3 hours. Given in 1916-'17 and alternate years.—PROFESSOR PARSONS.
 13. *Coleridge, Byron, Shelley, Keats*.—First half-year, 2 hours. Given in 1918-'19 and alternate years.—PROFESSOR PARSONS.
 16. *Eighteenth Century Prose*.—First half-year, 3 hours. Given in 1917-'18 and alternate years.—PROFESSOR WOODBRIDGE.
 17. *Nineteenth Century Prose*.—J. S. Mill, Carlyle, Newman, Arnold, Ruskin, Pater. Second half-year, 3 hours. Given in 1917-'18 and alternate years.—PROFESSOR WOODBRIDGE.
 19. *Nineteenth Century Novelists*.—Jane Austen, Scott, Dickens, Thackeray, George Eliot, Stevenson. Second half-year, 3 hours. Given in 1917-'18 and alternate years.—PROFESSOR NOYES.

Group III. Other Electives open to all students.

10. *Shakespeare*.—An intensive study of three or four plays, with special emphasis on the language. Second half-year, 3 hours.—PROFESSOR WOODBRIDGE.
23. *Old English*.—The beginnings of English Literature. Reading is begun at once and the study is made as literary in character as possible. First half-year, 3 hours. Given in 1917-'18 and alternate years.—PROFESSOR NOYES or PROFESSOR WOODBRIDGE.
24. *Old English—Beowulf*.—Prerequisite, English 23. Second half-year, 3 hours. Given in 1917-'18 and alternate years.—PROFESSOR NOYES or PROFESSOR WOODBRIDGE.
39. *American Literature since 1870*.—Mark Twain, Bret Harte, Henry James, William Dean Howells, Edith Wharton and other recent writers of novels and short stories. Second half-year, 3 hours.—MR. WATSON.

Group IV. Electives open only to Sophomores, Juniors and Seniors.

3. *Advanced Composition*.—Prerequisite, English 2. Second half-year, 2 class exercises, credit 3 hours.—PROFESSOR WOODBRIDGE.
27. *Argument*.—Weekly themes. Supplementary reading. First half-year, 3 hours. Given in 1917-'18 and alternate years.—PROFESSOR MOTTEN.
38. *Journalism*.—News gathering, news writing and news editing; practical field work, analysis of the news of the day and weekly stories. Second half-year, 2 class exercises, credit 3 hours. Given in 1917-'18.—MR. WATSON.
6. *Chaucer*.—The principal poems read critically in class. Life and thought of the times. Thesis. First half-year, 3 hours.—PROFESSOR NOYES.
20. *Greek Drama for English Readers*.—Literary study of twelve or more dramas of Æschylus, Sophocles, and Euripides, in poetic translation; lectures on the Greek Theatre and on Greek Art. Second half-year, 3 hours. Open to Freshmen in case they have had English 2. Given in 1916-'17 and alternate years.—PROFESSOR NOYES.

29. *Modern Essays*.—Arnold, Huxley, Mill, James, Tyndall, Morris, Wallace, and other representative essayists. Given in 1917-'18. —PROFESSOR NOYES.
36. *English Drama before 1642*, exclusive of Shakespeare.—First half-year, 2 hours. Given in 1916-'17 and alternate years.—PROFESSOR WOODBRIDGE.
37. *English Drama from the Restoration to the Present*.—Second half-year, 2 hours. Given in 1916-'17 and alternate years. Pre-requisite, English 36.—PROFESSOR WOODBRIDGE.

Group V. Electives open only to Juniors and Seniors.

11. *Milton*.—Poetry and Prose. First half-year, 3 hours. Given in 1917-'18 and alternate years.—PROFESSOR PARSONS.
14. *Tennyson*.—First half-year, 3 hours.—PROFESSOR MOTTEN.
15. *Browning*.—Second half-year, 3 hours.—PROFESSOR MOTTEN.
21. *Introduction to Literary Criticism*.—Reading and discussion of nineteenth century essays, chosen to represent the most important types of criticism. First half-year, 3 hours. Given in 1916-'17 and alternate years.—PROFESSOR WOODBRIDGE.
22. *Outline History of Literary Criticism*.—Critical standards from Aristotle to Sainte-Beuve. Second half-year, 3 hours. Given in 1916-'17 and alternate years.—PROFESSOR WOODBRIDGE.
25. *Teachers' Course*.—Instruction as to methods, texts and references for teaching grade and high school classics. Practice teaching. Second half-year, 3 hours.—PROFESSOR MOTTEN.
35. *Wordsworth*.—Second half-year, 2 hours. Given in 1916-'17 and alternate years.—PROFESSOR PARSONS.

FORESTRY.

PROFESSOR TERRY.

1. *Forest Mensuration*.—The use and construction of log rules, and the determination of the contents of logs in board, cubic, and cord measure. Construction and use of volume and yield tables; methods of determining increment in diameter, height and volume and the contents of single trees and whole stands; the determination of the age of single trees and stands. Methods of making forest maps showing types and topography. The surveying and

estimating of large tracts of timber in the Manitou Forest and Pike National Forest. Forest Service methods of making "Timber Surveys" are compared with other methods of timber cruising. Text-book: Graves' *Mensuration*. Cary's *Manual for Northern Woodsmen*, and *The Woodsman's Handbook*, published by the Forest Service, are used for reference. Lectures or recitations, and field work daily during the fall term.

2. *Dendrology*.—Monographic study of the important forest trees of the United States; their classification, identification, distribution and silvical characteristics. During the fall, field trips will be taken to familiarize the students with the forest flora in the Manitou Forest and surrounding region. The distribution of forest types in this part of the Rocky Mountains and the requirements of the species composing these types will be studied in their natural habitat. Lectures or recitations 5 hours, 6 hours of laboratory during the winter term.
3. *Wood Technology*.—The structural, mechanical, physical and chemical properties of wood, including timber-testing on Olsen and Riehlé machines. The identification of the more important commercial woods. Both microscopic and gross structure are studied. Methods of wood-preservation. Lectures 2 hours and laboratory 4 hours during the winter term.
4. *Silviculture*.—The physical foundations of silviculture—influence of temperature, light, moisture, soils, and other site factors on forest growth. The principal silvicultural systems, both of natural and of artificial regeneration, and the adaptability of these systems to American conditions. Thinnings and improvement cuttings. Methods of artificial forestation; direct seeding, planting, and the management of forest nurseries; lectures 3 hours, and assigned readings during the winter term.
5. *Forest Protection*.
 - (a) *General Protection*.—Protection from fire, animals, and adverse climatic influences.
 - (b) *Forest Entomology*.—A study of the life histories and habits of insects injurious to forest trees and products. Identification and methods of control.
 - (c) *Diseases of Trees*.—Injuries to trees caused by parasitic fungi; also the causes and effects of wounds and the treatment of such injuries. The course includes a considera-

tion of normal and pathological physiology. Field investigations of specific cases of injury by insects, fungi, and other agencies. During the fall and spring terms; lectures or recitations, 2 hours, and assigned readings during the winter term.

6. *Silvicultural Operations*.—During the spring term the students will receive practice in making thinnings and improvement cuttings, and in conducting other silvical investigations in the Manitou Forest. Experiments in different methods of direct sowing and planting will be carried on. Each student will prepare a planting plan for a portion of the Manitou Forest. Three or four weeks of the spring term will be spent in nursery work at the Forest Service Nursery at Monument, Colorado, under the direction of the Nursery Manager. (Monument is a half-hour's ride by rail from Colorado Springs.)
7. *Forest Improvement Work*.—The location and construction of forest roads, trails, bridges, telephone lines, fire lines, lookout stations, ranger stations, and other permanent improvement work on the National Forests, will be studied by lectures, assigned readings and inspection. Lectures, 2 hours during the fall term.
8. *Forest Management*.—The valuation of forest land, methods of regulating the yield, and the preparation and execution of working-plans for the management of forest property. The students will make a practical working-plan for a portion of the Manitou Forest, and from year to year each class will also help to execute the provisions of the general working-plan for the whole Forest. Lectures, field and office work daily during the fall term.
9. *Forest Utilization*.—The development of the lumber industry in the United States. Methods and costs of lumbering, milling, and marketing in the different forest regions. Minor forest products. Lectures or recitations 5 hours a week, and assigned reading during the winter term. Text book: Bryant's *Logging*.
10. *Forest Geography*.—The forest regions of the United States; detailed descriptions of the more important forest types and of commercial tree species; methods of silviculture and management; the National Forests; a few lectures on the forests of Canada, Alaska, the Hawaiian and Philippine Islands, and Mexico. The physiography of the United States will be con-

sidered in connection with the forest regions. The meteorology and the climatology of the United States will be treated in a general way, especially in their relation to forest growth and distribution. Lectures or recitations 5 hours a week, and assigned readings during the winter term.

11. *Forest Policy*.—History of the development of forest policies and administrative methods under the influence of economic and political conditions; forest legislation and administration of selected foreign countries; federal and state forest laws; the organization of the Forest Service and its administration of the National Forests. Forest taxation. Fernow's *History of Forestry* and *Economics of Forestry* are used for reference. Lectures or recitations 3 hours, and assigned readings during the winter term.
12. *Lumbering Operations*.—The Senior class will spend the spring term on some timber tract or tracts where extensive logging and saw-milling operations are in progress. They will study these methods in detail, considering the costs of the various operations, business organization and methods, efficiency of labor and of equipment. They will also estimate the timber and make a logging plan for the tract. The work will round out and complement the course in Forest Utilization and also afford additional practice in timber estimating.

GEOLOGY.

MR. KEYTE.

1. *General Geology*.—Prerequisite, Elementary Chemistry. Dynamical, Structural, and Historical Geology. Lectures, class discussions, laboratory work, and field excursions. The student, though not required to do so, is advised to elect Mineralogy (Geology 2) and Zoology (Biology 1b) before taking Geology 1, or at the same time with it. Text: Chamberlin and Salisbury's *College Geology*. Each half-year, 3 hours.
8. *Introductory Course*.—This course is intended for students desiring an elementary knowledge in Geology, especially that of Colorado. It includes lectures, quizzes, field trips and laboratory work. Text: Blackwelder and Barrows. First half-year, 3 hours.

MR. GREENSFELDER.

2. *Blowpipe Analysis and Determinative Mineralogy*.—Prerequisite, Chemistry 2, first half-year. The course comprises instruction in the use of the blowpipe, in appropriate methods for the qualitative determination of the constituents of common minerals, and in the use of a few simple chemical and physical methods applicable to mineral analysis. Two laboratory periods of two hours, one lecture or conference period per week, credit 3 hours. A laboratory fee of \$2.00 to cover the cost of minerals and chemicals will be charged.

GERMAN LANGUAGE AND LITERATURE.

PROFESSOR HOWE, PROFESSOR SAHM, MISS KELLERMANN.

1. *Elementary Course*.—Grammar, Reading, Composition, Conversation. *Immensee; Germelshausen*; "direct method." Each half-year, 3 hours.
2. *Intermediate Course*.—Prerequisite, German 1. Selected texts in poetry and prose with instruction by the "direct method." Each half-year, 3 hours.
3. *Scientific German*.—Prerequisite, German 1. For Engineering and Forestry students. Each half-year, 2 hours.
4. *Composition and Conversation*.—Prerequisite, German 2. First half-year, 2 hours.
5. *Advanced Composition and Conversation*.—Prerequisite, German 4. Second half-year, 2 hours.
6. *German Lyrics and Ballads*.—Prerequisite, German 2. First half-year, 2 hours.
7. *Lessing*.—Prerequisite, German 4 or 6. *Emilia Galotti, Nathan der Weise*; biographical sketch. Second half-year, 2 hours.

ADVANCED COURSES.

8. *Schiller*.—Prerequisite, German 5. *Don Carlos, Wallenstein, Die Braut von Messina, Maria Stuart, Die Jungfrau von Orleans, Wilhelm Tell, Schillers Briefe (Auswahl), Philosophische Schriften (Auswahl), Aus deutschen Lesebüchern V. 2 and 3*, Poems, biography of Schiller. Conducted in German. Each half-year, 2 hours. Given in 1917-'18 and alternate years.

9. *Goethe*.—Prerequisite, German 5. *Die Laune des Verliebten, Die Mitschuldigen, Götz von Berlichingen, Die Leiden des jungen Werthers, Clavigo, Stella, Egmont, Iphigenie auf Tauris, Torquato Tasso, Hermann und Dorothea, Faust; Gedichte (Auswahl), Briefe (Auswahl), Italienische Reise (Rom); Aus deutschen Lesebüchern V. 1; Bielschowsky's Goethe*. Conducted in German. Each half-year, 2 hours. Given in 1916-'17 and alternate years.
11. *The German Drama of the Nineteenth Century*.—Prerequisite, German 5. Kleist, Grillparzer, Hebbel, Ludwig; Gutzkow, Wildenbruch, Fulda; Sudermann, Hauptmann. Lectures in German, Especial attention will be given to the works of Kleist, Grillparzer and Hebbel. Conducted in German. Each half-year, 2 hours. Given in 1917-'18 and alternate years.
12. *Teachers' Course*.—Prerequisites, German 5 and at least one advanced course. A study of German pronunciation and grammar from the standpoint of the teacher. Instruction as to methods, texts, and works of reference. Each half-year, 1 hour.
13. *Current German Literature*.—Required of students who major in German. Each half-year, 1 hour.
14. *Brief History of the German Literature from the Old High Period on*.—Prerequisite, German 5. Recitations on Stroebe und Whitney, *Geschichte der deutschen Litteratur*; reports and discussions on Scherer, *Geschichte der deutschen Litteratur*, and Francke, *History of German Literature*; Heydtmann-Clausnitzer, *Deutsches Lesebuch für Lehrerseminare I*. From Lessing on one or more works of the leading German authors will be read, and papers on the same presented and discussed in class. Conducted in German. Each half-year, 2 hours. Given in 1916-'17 and alternate years.
15. *The German Drama from Lessing to the Present Time*.—Knowledge of German is not necessary for the course; dramas will be read in English translation. One half-year, 2 hours. Given in 1916-'17.

GRAPHICS.

ASSISTANT PROFESSOR MOORE, MR. ROBERTSON.

In the Freshman and Sophomore years, students are expected to devote more time to drawing than the number of hours assigned in the statements given below, but may do the extra work at such hours as suit their convenience.

Students in all engineering courses are expected to provide themselves with a good and complete set of drawing instruments—design and make to be approved by the instructor.

1. *Elements of Drawing*.—This course includes elementary exercises to develop facility in the use of the instruments, selected geometrical problems, cross-sections, shading with the right line and the bow pen, conventional representations, mathematical curves, cycloidal, and other motion curves, isometric, oblique and orthographic projections, working drawings, tracings, the form and proportions of standard letters, both free-hand and ruled, methods of spacing and laying out titles. First half, Freshman year, 6 hours, credit 2 hours. *Required of all Engineers.*
2. *Descriptive Geometry*.—The work consists of recitations from text-books and the graphic solution of problems. After the necessary elementary problems, special attention is given to the practical side of this subject, in its relation to stereotomy, pattern-making, sheet metal work, architecture, mine surveying, and machine drawing. First half, Freshman year, 1 hour, credit 1 hour; second half, Freshman year, 8 hours, credit 5 hours. *Required of all Engineers.*
3. *Machine Design*.—Includes recitations from text-books, the copying and tracing of machine drawings, drawing to scale from models and machine parts, working, detail, and assembly drawings, laying out tooth-wheel gearings, and the making of original working drawings from specifications. First half, Sophomore year, 4 hours, credit 2 hours. *Required of all Engineers.*
4. *Graphic Statics*.—This course includes the study of forces, stresses, couples and moments of inertia, and is introductory to the later course on Theory of Trusses. Recitations from text-books are followed by the application of the principles in the solution of practical problems in roof trusses, involving permanent and temporary loads, snow loads, and wind pressures. Second half, Sophomore year; first half-term, 2 hours per week; second half-term, 4 hours per week; credit 2 hours. *Required of Civil Engineers.*
5. *Theory of Mechanism*.—The course consists of text-book recitations on theoretical mechanism, motion and interaction of machine parts, mathematical problems in machine design, tooth gearing, link motions, etc., with drawing of plates illustrating the prac-

tical application of the problems. Second half, Sophomore year; first half-term, 2 hours; second half-term, 4 hours; credit 2 hours. *Required of Electrical Engineers.*

6. *Forester's Course in Elements of Drawing.*—This course consists of exercises selected from the Engineers' Course, Graphics 1. It is intended to prepare and fit the Forestry students for the work of making and lettering maps. This course is a prerequisite for Civil 1, Civil 201, and Forest Mensuration. First half, Freshman year, 2 hours, credit 1 hour. *Required of all Forestry Students.*

GREEK.

PROFESSOR MIEROW, MISS HALL.

1. *Elementary Course.*—Grammar, composition, and Xenophon's *Anabasis*. Designed to prepare a student to enter Greek 2 or Greek 8. Each half-year, 3 hours.
2. *Homer.*—Selections from the *Odyssey* and *Iliad* in the original, and the whole of both poems in translation; Plato, *Apology* and *Crito*; Herodotus, selections. Each half-year, 3 hours.
3. *Drama.*—Æschylus, *Prometheus* and *The Seven against Thebes*; Sophocles, *Antigone*; the remainder of Æschylus' and Sophocles' plays in translation; Euripides, *Alcestis* and *Medea*. Each half-year, 3 hours. Given in 1917-'18 and alternate years.
4. *History.*—Herodotus, the period of the Persian Wars; or Thucydides, the Sicilian Expedition. Parallel readings in modern historians. First half-year, 3 hours. Given in 1918-'19 and alternate years.
6. *The Lyric Poets.*—First half-year, 3 hours. Given in 1918-'19 and alternate years.
7. *A Course Designed for Teachers.*—Careful grammatical review; advanced prose composition; the intensive study of selected passages from the *Anabasis*. Second half-year, 3 hours. Given in 1918-'19 and alternate years.
8. *New Testament Greek.*—Open to students who have had one year of Greek. Second half-year, 3 hours.
9. *Lucian.*—The reading of selected dialogues; a study of the life and thought of the second century A. D. Second half-year, 3 hours. Given in 1918-'19 and alternate years.

Greek History (History 7).—An outline of the political history of Greece with lectures, occasionally illustrated, on the literature and life. One lecture and one recitation each week. First half-year, 2 hours.

NOTE:—For a course in Greek Drama for English readers, see English 20; for the classical epic in translation, see English 2.

HISTORY.

PROFESSOR PARISH, MISS PARISH.

10. *General European History*.—From the Barbaric Invasions to the close of the Thirty Years War. Open to all students and advised as the preliminary course in history. Each half-year, 3 hours.

MISS PARISH.

1. *Modern European History*.—From the close of the Thirty Years War to the present time. Open to those who have had History 10. Each half-year, 3 hours.
3. *English History*.—A survey of the political and social history of England from the earliest time to the present. Not open to Freshmen. Each half-year, 3 hours.
13. *Constitutional History of England*.—A study of some phase of the development of the constitution of England. Open to those who have had History 3. First half-year, 2 hours. Given in 1917-'18 and alternate years.
14. *British Colonial History*.—A study of the expansion of Great Britain, and of her colonial policy. Open to those who have had History 3. Second half-year, 2 hours. Given in 1917-'18 and alternate years.
15. *The Renaissance*.—A study of the period of renaissance in Europe from the twelfth to the sixteenth century. First half-year, 2 hours. Given in 1916-'17 and alternate years.
16. *The Reformation*.—A study of the Protestant Reformation, from Wycliffe to the Council of Trent. Second half-year, 2 hours. Given in 1916-'17 and alternate years.

PROFESSOR PARISH.

2. *American History*.—A general course covering the entire period of American History. Not open to Freshmen. Each half-year, 3 hours.

12. *History of the West*.—A study of the exploration of the North American continent and the westward growth of the United States. Open to those who have had History 2. Each half-year, 2 hours. Given in 1916-'17 and alternate years.
17. *United States History, 1783-1829*.—A special course in the period of the formation of the Union and the early development of the nation. Open to those who have had History 2. First half-year, 3 hours. Given in 1916-'17 and alternate years.
18. *United States History, 1829-1860*.—A special course in the Jacksonian Era and the period of slavery discussion. Open to those who have had History 2. Second half-year, 3 hours. Given in 1916-'17 and alternate years.
19. *Civil War and Reconstruction*.—A special course in the history of the United States from 1860-1876. Open to those who have had History 2. First half-year, 3 hours. Given in 1917-'18 and alternate years.
20. *Recent American History*.—A special course in the history of the United States since 1876. Open to those who have had History 2. Second half-year, 3 hours. Given in 1917-'18 and alternate years.
21. *Colorado History*.—A study of the history of Colorado and the Rocky Mountain region. Not open to Freshmen. First half-year, 2 hours. Given in 1917-'18 and alternate years.
22. *Teacher's Course*.—A study of the aims, materials, and methods of the teaching of history. Open to Juniors and Seniors who have had two years of history. Second half-year, 2 hours. Given in 1917-'18 and alternate years.
6. *General Survey*.—A survey of the entire field of history with the purpose of showing the unity and continuity of historical events and movements. Open to Juniors and Seniors who have had two years of history. Each half-year, 2 hours. Given in 1916-'17 and alternate years.
9. *Seminar Course in American or European History*.—Subject to be chosen at the beginning of the year. Open only to advanced students and required of those majoring in history. Each half-year, 2 hours.

PROFESSOR MIEROW.

7. *Greek History*.—An outline of the political history of Greece, with lectures, occasionally illustrated, on the literature and life. One lecture and one recitation each week. First half-year, 2 hours.
8. *Roman History*.—A general survey of Roman political and literary history; one lecture and one recitation each week; occasional illustration with lantern slides. Second half-year, 2 hours.

LATIN.

PROFESSOR MIEROW, MISS HALL.

1. Cicero, *De Senectute*, *De Amicitia*, *Selected Letters*; Horace, *Odes*.—Each half-year, 3 hours.
2. Horace, Selections from the *Satires* and *Epistles*; Terence, *Phormio*; Plautus, *Captivi*; Tacitus, *Germania* and *Agricola*; Pliny, *Selected Letters*. Each half-year, 3 hours.
6. *Latin Prose Literature of the Empire*.—A study of the lives and works of representative authors. Each half-year, 3 hours. Given in 1916-'17 and alternate years.
7. Virgil, *Æneid*, Books VII-XII, selections from the *Eclogues* and *Georgics*. First half-year, 3 hours. Given in 1918-'19 and alternate years.
8. *A Course Designed for Teachers*.—Careful grammatical review; advanced prose composition; the intensive study of selected passages from Cæsar and Cicero. Second half-year, 3 hours. Given in 1917-'18 and alternate years.
11. Ovid, *selected works*, with collateral readings on mythology. First half-year, 3 hours. Given in 1917-'18 and alternate years.
12. *The Hannibalic War*.—A study of the Latin sources; assigned readings in English. Second half-year, 3 hours. Given in 1917-'18 and alternate years.
13. *Latin Literature of the Republic*.—Selections from representative authors; lectures and collateral reading. First half-year, 3 hours. Given in 1918-'19 and alternate years.
14. Tacitus. *Annals* and *Histories*; lectures on the author's life, historical method, and style. Second half-year, 3 hours. Given in 1918-'19 and alternate years.

15. *The Private Life of the Romans*.—The reading of illustrative extracts in Latin; the discussion of papers prepared by members of the class; occasional lectures. Second half-year, 3 hours. Given in 1918-'19 and alternate years.

Roman History (History 8).—A general survey of Roman political and literary history; one lecture and one recitation each week; occasional illustration with lantern slides. Second half-year, 2 hours.

NOTE:—For a course on the classical epic in translation, see English 2.

MATHEMATICS.

PROFESSOR CAJORI, PROFESSOR ALBRIGHT.

1. **Algebra*.—Graphs; Variation; the Binomial Theorem; Undetermined Coefficients; Permutations and Combinations; Theory of Limits; Series; Theory of Equations. First half-year, 3 hours.
2. **Solid and Spherical Geometry*.—Planes and Lines in Space; Polyhedra, the Cylinder; Cone and Sphere; Spherical Triangles. Second half-year, 2 hours.
3. **Plane Trigonometry*.—Logarithms; the functions of one and two angles; inverse functions; the solution of triangles; De Moivre's theorem; simple applications. Second half-year, 3 hours.

PROFESSOR CAJORI.

4. *Analytic Geometry (Elementary)*.—Plane loci of first and second order. Higher plane curves. First half-year, 3 hours.
5. *Analytic Geometry (More Advanced)*.—More thorough study of plane loci; solid analytic geometry. Second half-year, 2 hours.
6. *Calculus, Differential and Integral*.—First half-year, 3 hours. Second half-year, 4 hours.
7. *History and Logic of Mathematics*.—This course is planned especially for those who are fitting themselves to be teachers of mathematics. One half-year, 2 hours.

*Courses 1, 2, and 3 required of Freshmen.

- 8.**Projective Geometry*.—One half-year, 3 hours.
 9.**Theory of Equations*.—One half-year, 3 hours.
 10.**Differential Equations*.—2 hours.
 11.**Determinants*.—One half-year, 2 hours.
 13.**Vector Analysis*.—One half-year, 3 hours.

*Of Courses 8, 9, 10, 11, and 13, only two are usually given in any one year.

PROFESSOR ALBRIGHT.

12. *Theoretical Mechanics*.—Prerequisite, Mathematics 6. This course is intended especially for students of engineering and mathematical physics. Each half-year, 3 hours.

NOTE.—For a course in Elementary Surveying, see Civil 1, p. 58.

MUSIC.

For courses in Music, including those counted toward a College Degree, see pp. 96-101.

PHILOSOPHY.

The required work in this department extends over the Junior and Senior Years, and gives the student a knowledge of the development of thought in the several departments of philosophy. The various seminary courses afford training in the study and discussion of important psychological, philosophical, and ethical questions.

PROFESSOR BREITWIESER.

1. *Psychology and Logic*.—Either Philosophy 1, or 2 and 3 required. Each half-year, 3 hours.
 - A. The first twenty-four weeks of the year are given to neurology and psychology, and the remaining twelve weeks to logic. The work of the first half-year includes the following topics:
 - (a) Introduction to psychology and philosophy.
 - (b) The anatomy and physiology of the nervous system as bearing on psychology.
 - (c) Instincts, attention, habit-formation, sensation, and perception.
 - B. The second half-year is devoted to the remaining topics in psychology and to logic.

In 1916-'17 Pillsbury's *Psychology* was used as a text. The satisfactory performance of a number of experiments is required. Outside assigned readings and the preparation of papers on special topics are also included. The equipment of the psychological laboratory (p. 109) is drawn upon for demonstration material.

2. *History of Philosophy*.—Either Philosophy 2 and 3, or 1 required. Open only to Juniors or Seniors. First half-year, 3 hours.

Lectures, Recitations, and Conferences.

(a) Greek Philosophy.

(b) Modern Philosophy. Lectures: (1) The Rise and Fall of Scholasticism; (2) The Beginnings of Modern Philosophy—Bacon and Descartes; (3) Spinoza; (4) Locke; (5) The Materialistic and Sensualistic Movements in France; (6) Leibnitz; (7) Berkeley; (8) Hume; (9) Kant, the Critique of Pure Reason; (10) Kant, the Transcendental Element in his Philosophy; (11) Hegel; (12) Spencer—The Philosophy of Evolution.

3. *Ethics*.—Either Philosophy 2 and 3, or 1 required. Open only to Juniors or Seniors. Prerequisite, Philosophy 2. Second half-year, 3 hours.

Lectures, theses, and discussions; the fundamental principles of ethics; Christian ethics; modern social and sociological problems; the ethical view of citizenship; a study of educational theories from an ethical standpoint.

PROFESSOR BREITWIESER AND ASSISTANTS.

9. *Experimental Psychology*.—A laboratory course. Experimental methods and typical experiments both qualitative and quantitative. Psychological tests and their applications to school problems. For the equipment of the laboratory, see p. 109. Laboratory fee, \$2.50. One hour recitation, laboratory hours to be arranged. Each half-year, credit 2 hours.—PROFESSOR BREITWIESER AND MR. GERLACH.

10. *Advanced Course in Psychology*.—Experimental work and reading from psychological literature. Open to students who have completed Philosophy 1. Each half-year, 2 hours.

11. *Mental Pathology and Hygiene*.—A study of normal and abnormal suggestion, fixed ideas, morbid-mindedness, insanity, hypnotism, hysteria, multiple personalities, faith cures, etc. Each half-year, 1 hour. Given in 1917-'18 and alternate years. Open to Juniors and Seniors.
12. *Psychology of Religion*.—Open to Juniors and Seniors only. Starbuck, James, Davenport, King, Ames, etc. The genetic and functional points of view in the interpretation of the religious consciousness. First half-year, 1 hour. Given in 1916-'17 and alternate years.
15. *Social Psychology*.—A study of various texts in social psychology, discussions, and selected readings. Second half-year, 1 hour. Given in 1916-'17 and alternate years. Open to students who have had Philosophy 1.
16. *Mental Tests, Retardation, Delinquency, etc.*—A study of the Binet-Simon and other tests; methods of testing; factors in retardation and delinquency. First half-year, 2 hours. Given in 1916-'17 and alternate years. Open to Juniors, Seniors and advanced students.

PHYSICAL EDUCATION.

Requirements for Men.

MR. ROTHGEB, DR. BLACKMAN, MR. HICKOX, AND ASSISTANTS.

The required work in this Department extends over the first three years of the College course; during the Freshman year, 3 hours a week, credit 1 hour each half-year, and during the Sophomore and the Junior years, 2 hours a week, credit 1 hour each half-year. Twice each year, just after registration in the fall and again near the end of the second half, every man in the Freshman, Sophomore, and Junior classes, and all others who enter competitive sports, are given physical examinations. In addition all Freshmen and such others as have indicated need of it in previous examinations are looked over carefully by the College Physician. In this medical examination, abnormalities of the body are noted, and conditions of external and internal organs ascertained, special care being given to heart and lungs. The medical examinations may be supplemented by special examinations at the desire of student or examiner.

MR. HICKOX AND ASSISTANTS.

1. *Physical Education* (Elementary).—Required of all Freshmen. Elementary work in marching, calisthenics, gymnastic dancing, heavy apparatus, and games of the competitive type. A combination of the Swedish and the German systems, leading to correct carriage, muscular co-ordination, knowledge of gymnastic nomenclature and form, and an appreciation of the value of regular exercise. Each half-year 3 hours, credit 1 hour.
2. *Physical Education* (Intermediate Course).—Required of all Sophomores. A continuation of Course 1, with wider scope, more varied methods, and greater emphasis on correctness and readiness of response. Each half-year, 2 hours, credit 1 hour.
3. *Physical Education* (Advanced Course).—Required of all Juniors. A continuation of Course 2, with a view to affording basis from which students may carry on the direction of physical work in secondary schools. Each half-year, 2 hours, credit 1 hour.

MR. ROTHGEB, MR. HICKOX.

4. *Competitive Sports, Intramural and Intercollegiate*.—Elective for all students meeting college requirements. Members of squads and teams who are excused from Courses 1, 2, or 3 for competitive sports must attain satisfactory proficiency in the sport elected and be regularly at practice.

Requirements for Women.

DR. BLACKMAN, MISS DAVIS.

The required work for women in the Department of Physical Education covers the Freshman, Sophomore, and Junior years. Three hours' work each week, credit one hour each half-year, is required during the Freshman and Sophomore years, and two hours' work each week, credit one hour each half-year, during the Junior year. Medical and physical examinations are made on entrance and at the end of the second and third years, and records similar to those for the men are kept. Special exercise is prescribed for students showing defects of posture or physical inability to do the required amount of work. In the fall and spring, organized sports in the out-door gymnasium, managed by the Women's Athletic Association and under the direction of the instructor, take the place of the regular gymnastic work. From November 1st to May 1st one hour of dancing a week may be substituted for one hour of gymnastic work.

MISS DAVIS.

1. *Physical Education*.—Preliminary work for Freshmen, 3 hours a week. Gymnastics, simple apparatus, group games.
2. *Physical Education*.—Intermediate work for Sophomores, 3 hours a week. Gymnastics, apparatus, team games.
3. *Physical Education*.—Advanced work for Juniors, 2 hours a week. Gymnastics, heavy apparatus, team games.
4. *Physical Education*.—Preliminary ball room dancing, 1 hour a week.
5. *Physical Education*.—
 - (a) Preliminary æsthetic dancing, 1 hour a week.
 - (b) Advanced æsthetic dancing, 1 hour a week.
6. *Physical Education*.—Folk dancing, 1 hour a week.

NOTE:—Full bloomers of dark blue serge and white sailor blouses are required. Short full skirts are required for out-door work. Ground Gripper gymnasium shoes are required.

PHYSICS.

PROFESSOR TILESTON.

1. and 2. *General Physics*.—This course is offered especially for students who do not expect to take the more advanced work of the department. The lectures will be illustrated by lantern slides and by experiments of historical interest. No prerequisites. Each half-year, lectures 2 hours, recitation 1 hour, laboratory 3 hours, credit 3 hours. Laboratory fee, \$4.00 for the year.
3. and 4. *General Mathematical Physics*.—A study of the phenomena and laws of Mechanics, Wave Motion, Sound, Heat, Magnetism, Electricity and Light. This course is designed to furnish a working knowledge of the basic principles of Physics. It is planned especially for those students who expect to continue their technical studies in the fields of Engineering or advanced Physics. Prerequisites, Entrance Physics and Mathematics 1 and 3. Each half-year, 3 hours.
5. and 6. *Physical Measurements*.—Six hours of quantitative laboratory work each week, to accompany Physics 3 and 4. Laboratory fee, \$3.00 each half-year. Each half-year, credit 2 hours.
7. *The Teaching of Physics*.—A course intended for students expecting to teach physics in the high schools. Prerequisites, Physics 1 and 2, or 3 and 4. Each half-year, 3 hours.

8. *Precision of Measurements*.—The nature and methods of elimination of errors in experimental work. Required of all students in Physics 6. Second half-year, 1 hour.
9. *Theory of Light*.—Lectures, recitations and laboratory work. Prerequisites, Mathematics 6 and Physics 3, 4, 5, 6 and 8. First half-year, 3 hours.
10. *Spectroscopy*.—Course 9 is continued with a study of the spectroscope, interferometer, concave and echelon gratings, the bolometer and thermopile. Second half-year, 3 hours.
11. *Electricity and Magnetism*.—Lectures, problems and recitations. First half-year, 3 hours.
13. *Electrical Measurements*.—A laboratory course to accompany Physics 11. First half-year, 2 hours.
14. *Modern Electrical Theory*.—A study of the classical experiments which establish the modern electron theory. Second half-year, 2 hours.
15. and 16. *Physical Seminar*.—A seminar conducted for the discussion of the current periodical literature in Physics. Each half-year, 2 hours.

POLITICAL SCIENCE.

MR. ELLINGWOOD.

1. *The Elements of Political Science*.—The nature, origin, and evolution of the State. The organization and operation of government. The purpose of the State. Freshmen not admitted. First half-year, 3 hours.
- 2.**The History of Political Theories*.—Prerequisite, Political Science 1. The development of political thought from earliest times. First half-year, Plato to Hobbes; second half-year, Hobbes to Austin. Textbook, and readings in Plato, Aristotle, Hobbes, Locke, Montesquieu, Rousseau, Bentham, Austin, etc. Each half-year, 2 hours. Open only to Juniors and Seniors.
- 3.**Comparative Government*.—Prerequisite, Political Science 1. A comparison of the constitutions and forms of government of the United States, England, Germany, France, and Switzerland. Textbook and lectures. Each half-year, 2 hours. Open only to Juniors and Seniors.

*Of Courses 2, 3, 4, and 5, not more than one will be given in any one year.

- 4.**International Law*.—The general principles governing the intercourse of nations. Development of the idea of a *Ius Gentium*. Contributions of the United States to International Law. First half-year, the Law of Peace; second half-year, the Law of War. Each half-year, 3 hours. Open only to Juniors and Seniors.
- 5.**The History of American Diplomacy*.—Prerequisite, History 2. A survey of our foreign relations from 1776 to the present time. The development of our foreign policy, with emphasis upon the Monroe Doctrine. A special study of the more important treaties. Textbook, lectures, and collateral reading. Each half-year, 3 hours.
- 6.†*American Government*.—Prerequisite, History 2. The origin, structure, and development of national, State, and local governments in the United States. One half-year, 3 hours.
- 7.†*English Government*.—Prerequisite, History 3. The nature, structure, and operation of English government as it is today. One half-year, 3 hours.
- 8.†*State Government*.—Prerequisite, History 2. The constitutional basis of the government of the States. The transition from territory to State. A special study will be made of the admission of Colorado, the formation and content of its constitution, and its development to date. One half-year, 3 hours.
- 9.†*American Political Theories*.—Prerequisite, History 2. The development of American political ideas from the Colonial period to the present time. Particular emphasis upon recent tendencies. Text-book and lectures. One half-year, 3 hours.

PUBLIC SPEAKING.‡

1. *Declamations*.—Voice culture; declamations; class work and individual training. Each half-year, 1 hour.
3. *Debates*.—Lectures; briefs; debates on social, economic, historical, and political questions. Second half-year, 2 hours.

*Of Courses 2, 3, 4, and 5, not more than one will be given in any one year.

†Of courses 6, 7, 8, and 9, not more than two will be given in any one year.

‡See Oratorical and Debating Contests, p. 119.

ROMANCE LANGUAGES AND LITERATURES.

PROFESSOR HILLS, ASSISTANT PROFESSOR JAMESON, MISS BARRETT,
MISS WOLLASTON, MR. LATIMER, MR. TAMAYO.

FRENCH LANGUAGE AND LITERATURE.

1. *Elementary Course*.—Fraser and Squair's *Shorter French Course*; Aldrich and Foster's *French Reader*; George Sand, *la Mare au diable*; Labiche et Martin, *le Voyage de M. Perrichon*. Writing from dictation, and practice in speaking. Three divisions. Each half-year, 3 hours.
2. *Intermediate Course*.—Syntax and prose composition; oral work based on texts read; and the reading of the following works: Alfred de Musset, *Pierre et Camille*; Anatole France, *le Livre de mon ami*; Maupassant, *Contes*; Molière, *le Bourgeois gentilhomme*; Bowen's *French Lyrics*. Lectures. In this course French is the language of the class room. Two divisions. Each half-year, 3 hours.

For outside reading: About, *le Roi des montagnes*; Balzac, *Ursule Mirouet*, *le Père Goriot*, *Eugénie Grandet*; Dumas, *les Trois Mousquetaires*, *la Tulipe noire*; Erckmann-Chatrian, *le Conscrit de 1813*, *Waterloo*; Feuillet, *le Roman d'un jeune homme pauvre*; Gréville, *Dosia*; Victor Hugo, *Notre Dame de Paris*; Mæterlinck, *la Vie des abeilles*; Malot, *Sans famille*; Ohnet, *le Maître de forge*; George Sand, *François le champi*, *les Maîtres sonneurs*, *Nanon*; Souvestre, *Un philosophe sous les toits*; Vigny, *Cinq-mars*. Each student is expected to read two of these works out of class, and pass examination upon them. Other standard works, if approved by the instructor, may be read in the place of those given in the list.

3. *Nineteenth Century Literature* (2 hours), and *Phonetics and Free Oral Composition* (1 hour).—The following works will be read in class: Victor Hugo, *Hernani*, *Poésies (extraits)*; Lamartine, *Méditations (extraits)*; Alfred de Musset, *On ne badine pas avec l'amour*, *Poésies (extraits)*; selected dramas and selections from prose fiction; Sainte-Beuve, *Selected Essays*; and parts of Lan-son's *Histoire de la littérature française*. Lectures. Each half-year, 3 hours. Given in 1916-'17 and alternate years.

Outside Reading.—Each student is expected to read four of the following groups out of class, and pass examination upon them:

(1) Mme. de La Fayette, *la Princesse de Clèves*, and Saint-Pierre, *Paul et Virginie*; (2) Chateaubriand, *Attala* and *René*; (3) Lamartine, *Graziella*; (4) Victor Hugo, *les Misérables* (extraits), or *Notre Dame de Paris*; (5) Balzac, *Ursule Mirouet*, or *Eugénie Grandet*; (6) George Sand, *François le champi* or *les Maîtres sonneurs*; (7) Anatole France, *le Crime de Sylvestre Bonnard*; (8) Pierre Loti, *le Pêcheur d'Islande*; (9) Mæterlinck, *les Aveugles*, *l'Intérieur*, and *l'Oiseau bleu*; (10) Rostand, *Cyrano de Bergerac*, or *Chantecler*.

4. *Classical French Literature* (2 hours), and *Advanced Prose Composition* (1 hour).—Prerequisites, French 1 and 2. The following works will be read in class: Warren's *French Prose of the XVII Century*; Corneille, *le Cid*, *Horace*; Racine, *Andromaque*, *Athalie*; Molière, *l'Avare*, *les Femmes savantes*; La Fontaine, *Fables*; Boileau, *l'art poétique*; and parts of Lanson's *Histoire de la littérature française*. Lectures. Each half-year, 3 hours. Given in 1917-'18 and alternate years.

Outside Reading.—Each student is expected to read several plays of Corneille, Racine, and Molière out of class, and pass examination upon them.

NOTE.—In Courses 3 and 4, French is the language of the class room.

9. *The Comedies of Molière*.—Each half-year, 2 hours. Given in 1917-'18 and alternate years.
10. *French Drama*.—From the beginning of the nineteenth century to the present day. Each half-year, 2 hours. Given in 1916-'17 and alternate years.
8. *Old French*.—Clédat's edition of the *Chanson de Roland*. Each half-year, 1 hour. Open only to Juniors, Seniors, and graduates, who have had Latin and French 1, 2, and 3 or 4. Given in 1917-'18 and alternate years.

NOTE.—Courses 9, 10 and 8 are conducted in French. Students who take any of these courses are expected to have Lanson's *Histoire de la littérature française*, and an all-French dictionary (the *Littre-Beaujean* or the *Petit Larousse illustré*).

ITALIAN LANGUAGE AND LITERATURE.

1. *Elementary Course*.—Grandgent's *Italian Grammar*; Bowen's *Italian Reader*; Goldoni, *Il vero amico* and *Un curioso accidente*. Each half-year, 2 hours. Given in 1917-'18 and alternate years. Students may not elect Italian 1 and Spanish 1 in the same year.
2. *Italian Literature*.—Dante, *Vita Nuova* and *Divina Commedia*. Lectures and collateral reading. Each half-year, 3 hours. Given in 1916-'17 and alternate years.

SPANISH LANGUAGE AND LITERATURE.

1. *Elementary Course*.—Hills and Ford's *Spanish Grammar*; Hills's *Spanish Tales for Beginners*; Alarcón, *El capitán Veneno*. Writing from dictation, and practice in speaking. Each half-year, 3 hours. Three divisions. Students may not elect Spanish 1 and Italian 1 in the same year.
6. *Spanish Conversation*.—The class will meet twice a week, but only one hour's credit will be given. Each half-year, 1 hour.
2. *Intermediate*.—Syntax and prose composition; oral work based on texts read; and the reading of the following works: Hills and Reinhardt's *Spanish Short Stories*; Cervantes, *Don Quijote* (extracts edited by Ford); Hills and Morley's *Spanish Lyrics*. Lectures. In this course Spanish is the language of the class room. Each half-year, 3 hours.

For outside reading: Alarcón, *El escándalo*, *El niño de la bola*, *El sombrero de tres picos*; Blasco Ibáñez, *La barraca*; "Caballero," *La gaviota*, *La familia de Alvarada*; Isaacs, *María*; Palacio Valdés, *La aldea perdida*, *La alegría del capitán Ribot*; Pardo Bazán, *De mi tierra*, *Pascual López*; Pereda, *Don Gonzalo González*, *Pedro Sánchez*; Pérez Galdós, *Doña Perfecta*, *Marianela*, *Gloria* (2 vols.); Juan Valera, *Doña Luz*, *Pepita Jiménez*, *El comendador Mendoza*. Each student is expected to read two of these works out of class, and pass examination upon them. Other standard works, if approved by the instructor, may be read in the place of those given in this list.

7. *Spanish Literature of the Nineteenth Century*.—Each half-year, 2 hours. Given in 1916-'17 and alternate years.
8. *Spanish Literature of the Siglo de Oro*.—Each half-year, 2 hours. Given in 1917-'18 and alternate years.

NOTE:—Courses 7, 8, and 9 are conducted in Spanish.

9. *Old Spanish*.—Menéndez Pidals' edition of the *Cantar del mío Cid*. Each half-year, 1 hour. Open only to Juniors, Seniors, and graduates, who have had Latin and French, and Spanish 1 and 2. Given in 1916-'17 and alternate years.
10. *Spanish Teachers' Course*.—Prerequisites, Spanish 1 and 2, and at least one advanced course. Phonetics, review of the elements of grammar, examination of texts, practice in teaching. Each half-year, 2 hours. Given in 1917-'18 and alternate years.

SHOP WORK.

MR. LOVE.

The work in the shops is planned in order to give students the basis of modern manufacturing methods and organization, and to develop in them analytical and executive ability. Preliminary work to develop some skill in the use of the shop tools is followed by organized manufacturing work on a small variety of articles under the direction of the more advanced students. Planning and organization of manufacturing plants is studied through the medium of inspection trips and outside reading.

1. *Elementary Shop Work*.—Fundamental principles of pattern-making, forging, and machine work. Outside reading and shop exercises. More advanced work is given if the ability of the students warrants this. Required of all engineers.
2. and 3. *Manufacturing*.—In these courses the students do such direct labor as is required in the manufacture of tools, apparatus for the shop, and in making some articles of commercial use. First and second halves of second half-year, Freshman year. Two three-hour periods. Credit one hour each. Required of Electrical Engineers.
4. *Supervision and Executive Work*.—In this course the students do the work of foremen, routing clerks, production clerks, etc. Second half, Sophomore year, one three-hour period, credit one hour. Required of Electrical Engineers.
5. *Shop Organization and Planning*.—Inspection trips to various industrial plants about Colorado Springs and Colorado City showing good planning and more or less extensive division of labor. Students taking this course then plan the work to be done in

courses 2, 3 and 4, deciding on the methods of performing the work in the most efficient ways and making such tools as will be required in this work. First half, Junior year. Required of Electrical Engineers.

FEES.

Shop 1, 4, and 5.....	\$4.00 each
Shop 2 and 3.....	2.00 “

COURSES FOR TEACHERS.

Courses will be arranged, on application, for teachers of the city at hours convenient for them, either late in the afternoon or on Saturday mornings. Such courses, if passed successfully, will be credited as college work.

Department of Music

FACULTY.

WILLIAM FREDERICK SLOCUM, D.D., LL.D. 24 College Place
President.

EDWARD DANFORTH HALE, A.M. 1424 N. Nevada Ave
Dean of the Department of Music and Professor of the Theory and Literature of Music, and the Pianoforte.

A.B. (Williams College) '80; A.M. (*ibid.*) '83; Professor at the New England Conservatory, '85-'04; Colorado College, '05.

MRS. GEORGE MAXWELL HOWE. 1811 N. Nevada Ave.
Instructor in Violin.

Cincinnati Conservatory of Music, '01-'03; Stanton College, Natchez, Miss., '03-'05; Sternsches Konservatorium, Berlin, '05-'06; Woman's College, Columbia, S. C., '06-'07; Colorado College, '10.

HENRY HOWARD BROWN. 1716 Wood Ave.
Instructor in Voice Culture.

Pupil of E. W. Glover, Assistant Director Cincinnati May Festivals, '00; J. A. Broeckhaven, '00-'01; James Sauvage, '01; Dora Topping, '02-'04; Max Spicker, '03-'06; Amherst Webber (coach of M. de Reszke, Mmes. Nordica, Eames, and others), '05; Colorado College, '14.

EMMONS LUETSCHER. 1317 N. Weber St.
Instructor in Violoncello.

Pupil of Bruno Steindel, '10; Carl Brueckner, '11-'14; University of Wisconsin, '12-'14; Colorado College, '16.

ALEXANDER PIRIE, A.R.C.O. 632 N. Nevada Ave.
Instructor in Organ.

Pupil of T. H. Collinson, Mus. Bac. F.R.C.O., Edinburgh, Scotland, for Organ, Harmony and Orchestration, '04-'06; W. Townsend, College of Music, London, England, for Piano, '02-'04; Assistant Organist, The Cathedral, Edinburgh, Scotland, '07-'10; Assistant Organist to the University of Edinburgh, '07-'10; Associate of the Royal College of Organists, London, England, '07; Colorado College, '16.

JANET ZILPAH WARNOCK Bemis Hall
Instructor in Voice Culture.

Colorado College and School of Music, '14-'16; Colorado College, '16.

ADMISSION.

To preparatory courses and to all special studies students are admitted without examination. *Pianoforte* PREPARATORY is a requirement for admission to *Pianoforte* (a).

COURSES OF STUDY.

1. *General Musical Culture*.—Outlines of Musical Notation, Nomenclature and Acoustics; Musical Structure, Formal, Harmonic, and Contrapuntal; the Symphony, the Orchestra, and the Orchestral Score; the Masterpieces of Oratorio, Opera, Concerto, and other large forms; Musical History, Biography, and Criticism. This course is designed to appeal to all classes of students; in particular, through both concrete and imaginative treatment of the subject, to those who, for various reasons, cannot acquire the musical technique, but would be glad to give music a place in their culture scheme, to qualify themselves for intelligent criticism and appreciation of the art. Each half-year, 2 hours. Tuition, \$10.00 each half-year. Free to music students.
2. *Pianoforte: Preparatory*.—A course normally occupying three years, designed to qualify for admission to the Collegiate course. It may be pursued here or under accredited teachers. At the end of it the student is expected to show satisfactory knowledge of musical notation and elementary nomenclature; of all scales and arpeggios, with the ability to execute them at a moderate tempo; and of the following literature or its full equivalent, including the musicianly performance by heart of a representative program chosen from it.

Bach: *The Magdalena Bach Clavecin Book*.

Haydn: *Sonatas*, G Major, 2-4, D major, 4-4 (moderato).

Mozart: The easiest sonatas in C major and F major.

Mendelssohn: *Kinderstuecke*, Op. 72 and the easiest numbers of *Songs Without Words*.

Schumann: *The Jugendalbum*.

Pianoforte: Collegiate.—Four years' course. Structural, memory, technical, critical and interpretative study of a schedule of pianoforte literature. The presentation of typical programs made up from this literature. Sight-Reading. Forming and maintenance of a répertoire. Study of Hale, Gow, Cutter, Goetschius, Grabill, Matthay, Breithaupt, Leschetizky, and other works on structure and technique.

3. *Composition, including original work, Counterpoint, Harmony, Form, Eartraining.*—Each half-year, 2 hours. Texts by Hale, Duncan, Goetschius, Spalding, Foote and Spalding, Chadwick, Hull.
4. *Orchestration.*—Each half-year, 1 hour.
5. *Violin: Preparatory.*—Studies for correct position of bow and violin; studies in the first five positions, exercises in shifting and in different styles of bowing. Double stops. Ensemble.

Violin: Collegiate.—

- (a) All the positions. Studies by Mazas, Blumenstengel, Kreutzer, Sevcik.
- (b) Studies by Kreutzer (second half), Rode, Stojanovits. Scale technic, concertos and classic pieces by the old masters as well as by composers of the Romantic School.
- (c) Studies by Fiorillo, Gaviniés, Sevcik, Sauret. Concert pieces, sonatas, concertos.

Students are especially prepared for recital programs. A recital of technical and artistic merit must be given for graduation.

Orchestra practice once a week.

6. *Violoncello.*—Kummer, Grutzmacher, Dotzauer, Servais and others. Répertoire and ensemble from Bach, Beethoven, Schumann, Saint-Saëns and others.
7. *Voice Culture.*—Vocalises; Songs; Standard English, American, German, French, Italian; Arias: Opera and Oratorio. Special training for church singing and chanting; correct speech for singing; sight-singing.

The final test for special course diploma embraces the musicianly performance, with mastery of voice, style, and interpretation, of an Italian and French aria, several English songs and German songs, a sight-reading test.

The final test for the Full Diploma: A musicianly performance, with mastery of voice, style, and interpretation of an entire song recital consisting of Italian, French, German, and English songs and arias, and a knowledge of one complete Opera and one Oratorio.

8. *Organ.*—No student will be admitted to the Organ School who has not had a course in Piano amounting to, at least, Course 2—Preparatory.

Preliminary Organ Work.—

Stainer's *Organ School*, Homer's *Pedal Technique*, Albrechtsberger's *Trios for The Organ*, and *Eight Short Preludes and Fugues* by Bach.

A graduated course combining the best organ works of ancient and modern composers; a knowledge of modern orchestral and piano works transcribed for the organ; training in adapting non-organ works for that instrument; and a knowledge of organ construction and history.

Candidates for Diplomas, will be required to give an organ recital and to write a short paper on the construction of the organ, its history, composers and their work.

DIPLOMAS.

Students satisfactorily completing Courses 1, 2 or 5 or 6, and 3*a*, *b*, *c*, *d*, together with a high school course or its equivalent, are entitled to receive the Diploma for Special Courses, except 3. Students specializing in Violin (Course 5) or Voice (Course 6) may substitute for Course 2 a satisfactory equivalent; but they must qualify in the requirements for admission to 2*a* (p. 97). The Full Diploma is awarded upon the completion of Courses 1, 2 or 5 or 6, 3 and 4; but students specializing in 5 or 6 must take at least 2*a*.

SPECIAL COURSES.

Pianoforte, Violin, Voice, the Orchestral Instruments, Counterpoint, Harmony, Composition, Orchestration, Public School Music. Students may enter these without examination, and pursue them for any desired period (but not less than one-half year or unexpired portion thereof). No credits are given unless some regular course be adopted later, in which satisfactory work will be permitted to count.

Through its weekly conferences conducted by the Dean, its course in General Musical Culture, its weekly recitals given by students and faculty, its Glee Clubs and Orchestra, the Department provides the free educational advantages which can be had only in a well organized school.

LESSONS.

The practice of musical technique is much too intricate and difficult to be adequately guided through weekly or semi-weekly lessons. The student ought to have the privilege of conference with his teacher whenever he is in difficulty, and the teacher ought to be able to see his pupil as often as, in his judgment, he needs assistance in his daily work.

This is the plan which this School of Music—with both practice and teaching rooms in the same building—has been able to adopt, and with the happiest results. It is practically a daily lesson scheme, and offers a great opportunity to the ambitious student.

NORMAL COURSE.

There is a growing demand in the secondary schools of Colorado and other states for teachers who, besides their liberal arts work, are competent to teach the pianoforte and the related musical theory. This department offers a normal course designed explicitly to qualify young men and women to do this work. The course qualifies equally for the private teaching of Music. A Teacher's Diploma is granted students who satisfactorily complete the normal course.

MAJOR IN ART AND MUSIC.

Candidates for the degree of A.B. may obtain a major in Art and Music under the following conditions. They must take a minimum of eight half-year hours in music and the same amount in Art and Archaeology. In addition six hours must be taken in one of these departments or divided among them. The remaining eight hours of the major shall be determined by the Committee on Individual Courses, in consultation with the major instructor. Music 1 (4 hours), Music 2 or 5 or 6, (2 hours—when taken in conjunction with courses 1 and 3) and Music 3 (4 hours, or 8 hours if taken a second year) and Music 4 (2 hours) are allowed to count toward this major.

EQUIPMENT.

The Department occupies the Perkins Fine Arts Hall, a beautiful College building of stone, erected in 1900, at a cost of \$37,000. It has at its command twelve class and practice rooms, a recital hall seating 100, and an auditorium seating 600, equipped with a Chickering concert grand piano and a Hutchings three manual pneumatic organ.

The Department is affiliated with The Institute of Musical Art of the City of New York, and with The New England Conservatory of Boston, and with Mme. Augusta Cottlow, of Berlin, Germany. Its standards are accepted in these cities precisely as those of Colorado College are at Harvard, Yale, and elsewhere.

TUITION.

Pianoforte, Voice, Violin, Violoncello, or Ensemble with Members of the Faculty—\$35.00 each half-year. Voice or Violin, 2 lessons weekly, \$50.00 each half-year.

Composition (including Harmony and Counterpoint) or Orchestration—\$15.00 each half-year.

Orchestral Instruments—\$20.00 each half-year.

General Musical Culture (free to Music students)—\$10.00 each half-year.

Public School Music—\$25.00 each half-year.

Practice: Pianoforte—one hour daily—\$3.00 each half-year.
Additional hours, \$2.00.

Practice: Organ—Estey pedal organ—\$5.00 each half-year.
Hutchings organ, \$10.00.

General Information

LOCATION.

Colorado College is fortunate in its environment. Colorado Springs, the county seat of El Paso County, and the third largest municipality of the commonwealth, is remarkable for its history and character, and is admirably adapted to be the seat of a college. Founded in 1874, under the direction of men of shrewd foresight and broad views, it has maintained from the beginning high standards of morality and culture. Saloons and the attendant destructive influences are absent. Radiating railroad systems and neighboring gold fields have fostered its wealth. Many visitors are attracted hither, both pleasure seekers and health seekers, but the latter are so far outnumbered that the place has none of the depressing influences so often observed at noted health resorts. The lover of nature might seek far before finding a spot more favored. The mountains are close at hand, their serrated outlines occupying about one-third of the horizon. In the center of the range, less than a dozen miles away, stands Pike's Peak. Its summit is reached by a cog railway, by bridle paths, and by an automobile road. About its base are many cañons, and in one of these, around a celebrated group of mineral springs, is the city of Manitou. The climate of Colorado Springs has attained a world-wide reputation by reason of the dryness and rarity of the air, and the opportunity for outdoor exercise afforded by the great number of fine days (helpful in cases of malarial disease, asthma, and incipient phthisis). Students unable to work in other climates may here continue their studies, while at the same time making a permanent gain in health.

BUILDINGS.

The buildings of the College are situated on a tract of about 50 acres, in the heart of the best residence portion of the city. All except the building containing the shops are of stone. Heat and electric light are furnished to all from a central plant.

PALMER HALL, completed in the fall of 1903 at a cost of \$287,000, contains laboratories and general lecture rooms. The style of architecture is that which has been chosen for the entire system of buildings eventually to occupy the College reservation, and, like the Library and Perkins Fine Arts Hall, it is built of the "Peachblow" sandstone. The structure is fire proof. On the first floor are laboratories for Chemistry, Physics, Mining, Metallurgy, and a large demonstration room. On the second floor are general lecture rooms, and other

laboratories for Chemistry. Near the head of the west stairway is a large bronze tablet, dedicated to the late General William J. Palmer by the survivors of the 15th Pennsylvania Cavalry. The third floor contains the laboratories for Biology, Geology, and Mineralogy, general lecture rooms, and a large, well-lighted Museum for the natural science collections of the College. The building was equipped at a cost of \$50,000.

THE PERKINS FINE ARTS HALL, named for one of the principal donors, the late Willard B. Perkins, of Colorado Springs, was completed in 1900. It is a two-story stone building, and cost \$37,000. The lower story is a large auditorium, seating 600, in which the chapel exercises are held and concerts and lectures are given. This room contains a valuable pipe organ, given by Miss Elizabeth Cheney, of Boston, Mass., in memory of her brother, Charles P. Cheney. The upper story contains the lecture and practice rooms of the Department of Music, and the College Art Gallery. For a description of the Art Collection, see page 106.

THE LIBRARY, given in 1894 by the late N. P. Coburn, of Newton, Mass., and costing \$50,000, is of great architectural beauty and admirably adapted to its purpose. A full size cast of the "Winged Victory" of Samothrace, stands at one end of the main hall. In recesses are casts of the Hermes of Praxiteles and of Mercie's David. Mr. A. L. Dickerman's collection of rare Indian curiosities adds to the interest of the room.

THE ASTRONOMICAL OBSERVATORY is the gift of Henry R. Wolcott, of Denver, and was completed in 1894. Besides the dome room it contains a lecture room, a transit room, and a photographic dark room.

THE SHOPS. Two buildings contain the dynamo room and the shops for carpentry, forging, and machine work.

THE PRESIDENT'S RESIDENCE, at the northern boundary of the campus, was purchased in 1888, and remodeled in 1903.

CUTLER HALL (Engineering Building), the oldest building on the campus, was first occupied in 1880. It contains recitation rooms, and electrical and hydraulic laboratories.

COSSITT MEMORIAL. Through the generous gift of \$110,000 by Mrs. A. D. Juilliard of New York, a Men's Building has been erected. It was dedicated in June, 1914. It contains a finely equipped gymnasium, a stadium, reading rooms, dining hall, and a common room, and is the center of the athletic and social life of the men of the college. The

building was given by Mrs. Juilliard in memory of her father, and is called The Frederick H. Cossitt Memorial Hall. The dining hall is under the management of Miss Frances M. Rogers.

THE ADMINISTRATION BUILDING, formerly a residence, was presented to Colorado College in the summer of 1914. It adjoins the College campus, and provides convenient quarters for all the offices of administration. The Faculty Club, also, is established there.

THE UTILITY BUILDING, erected in the summer of 1914, overlooking Washburn Field, contains the Electrical Engineering Laboratory.

COLLEGE RESIDENCES.

HAGERMAN HALL, built in 1889, is used as a home for young men. Besides the students' rooms, it contains a large social room provided with piano, games, and magazines. On the roof and in the office of the Weather Bureau are the Meteorological Station instruments.

MONTGOMERY HALL was erected and furnished in 1891 by the Woman's Educational Society, and presented to the College. It provides a comfortable home for young women, and contains the rest room under the charge of the Young Women's Christian Association, for the use of all young women of the College.

TICKNOR HALL, the gift of Miss Elizabeth Cheney, was opened as a home for young women in 1898. Besides students' rooms, it contains an infirmary capable of complete isolation. The infirmary is open to all young women living on the campus, and is in charge of a trained nurse, whose services, whether in the infirmary or in the students' rooms, are paid for by an annual fee, due in September, of \$5.00 from each young woman.

MCGREGOR HALL, a commodious and convenient building, was opened in 1903 as a third residence for young women. It contains a fully equipped gymnasium.

BEMIS HALL, the center of the social life of the whole college, was opened in September, 1908. In it, besides rooms for young women are the offices of the Dean of Women, a spacious Common Room, large dining hall with an open wood roof after the manner of the English halls, and the Cogswell theatre for college dramatics.

LIBRARY.

MANLY DAYTON ORMES, LIBRARIAN.

The Library building has been elsewhere described (p. 103). In it are, altogether, about 72,000 volumes and 40,000 pamphlets. Twenty-five hundred volumes are in the Engineering Library. The leading literary and scientific journals are received, as are also the United States Government publications and those of the State of Colorado. Of United States documents the library now has about 10,000 volumes, including the records of Congress complete from 1847, and many valuable records for the period 1774-1847.

The engineering library is located in a large room 60 feet by 30 feet in the basement of the N. P. Coburn Library building. It contains 2,500 volumes on technology. This library has a complete set of the Engineering Record (formerly called the Sanitary Engineer), and Van Nostrand's Engineering Magazine; one hundred and seven volumes of the Minutes of the Institution of Civil Engineers of Great Britain; the recent volumes of the Engineering Magazine, Cassier's Magazine, Engineering News, Engineering and Mining Journal, Technical World, Electrical World, Mineral Industry, Electrical Engineer, Electrical World and Engineer, Electrician (London), Electric Journal, Technology Quarterly, Municipal Engineering, American Machinist, Journal of the Franklin Institute; the current numbers of Mining Science, Metallurgical and Chemical Engineering, Engineering Index, Chemical News, and Journal of the American Chemical Society; the recent transactions of the American Institute of Electrical Engineers, and the American Society of Civil Engineers. A complete set of the Scientific American and Scientific American Supplement, of the American Journal of Science, and the current numbers of other leading periodicals on pure science and mathematics, are kept in the main room of the Coburn Library. The engineering library has also the reports of the State Engineer, the United States Geological Survey, the United States Coast Survey, the Chief of Engineers and the Chief of Ordnance, U. S. Army, as well as the United States publications on Irrigation.

THE COBURN LIBRARY BOOK CLUB, organized in 1897, provides its members with the best new books, which are given to the Library after two years. The fee is \$5 a year or \$3 for six months. Members enjoy the full privilege of the Library. The Club has purchased 3,900 books, of which 3,600 have already been given to the Library.

The Wednesday Art Club and the local chapter of The Daughters of the American Revolution have started collections of books on their special topics.

A reading room is provided with the current literary and scientific magazines, as well as a number of leading newspapers.

In Room 44 of Palmer Hall are about 300 volumes, given to the Classical Department by Mrs. M. C. Gile, to form the beginning of a department library for Greek and Latin.

ART COLLECTIONS.

The College Art Gallery on the upper floor of Perkins Fine Arts Hall contains several valuable paintings by famous artists. Among these are a portrait of General William J. Palmer, by Herkomer, a portrait of President W. F. Slocum, by Alexander, and a portrait of the late Professor Ahlers, by Benson. The portrait of President Slocum was presented at Commencement, 1913, by friends of the College, in celebration of his quarter-centennial of service.

A bronze statue of the Flying Mercury, presented by James F. Burns, and marble busts of Antinous and Dante are placed in this room.

In the Art Room of Palmer Hall, where the classes in Art and Archæology meet, there is hung a fine collection of large carbon photographs. These reproductions of famous works of art in the European Galleries are from the firm of Braun, Clément in Paris. The cabinets in the Art Room contain over 2,000 mounted photographs illustrating the History of Architecture, Sculpture and Painting throughout the ages. In addition the Classical Department owns several hundred fine lantern slides used as illustrative material for courses in Greek and Roman History, Classical Mythology and Archæology.

ACADEMY OF FINE ARTS.

Students of Colorado College have the opportunity of enlarging their knowledge of the theory and practice of Art in the Colorado Springs Academy of Fine Arts which is affiliated with the College. The Academy is located in Perkins Hall, and is under the direction of the Misses Leaming, who were formerly instructors in the Art Institute of Chicago. The work of the Academy is accredited by the Art Institute of Chicago and the Teachers College of New York. Practical work is offered in Drawing, Painting and Design, and there are lecture courses as follows:

1. Theory and practice of Art. One hour a week through the year.
2. Composition, 1 hour, second half-year.
3. Design, 1 hour, first half-year.
4. Artistic Anatomy, 1 hour a week through the year.

College credit is allowed for courses 1, 2, and 3, and students majoring in Art may receive credit also to the amount of two half-year hours for practical work in the Academy.

Circulars giving full information as to prices, etc., will be sent on application.

LABORATORIES AND APPARATUS.

BIOLOGY.

THE BIOLOGICAL LABORATORIES are nine rooms on the second floor of Palmer Hall. In these, each student is assigned a desk, and in courses requiring microscopic observation is furnished with a microscope for which he is held responsible. There is an abundant supply of all kinds of glassware necessary for the various courses, also micrometer eye-pieces, cameras, dissecting microscopes, paraffine baths, microtomes, life-boxes and charts. For the courses in Zoology, Comparative Anatomy, etc., a number of mounted and disarticulated skeletons and anatomical models are provided. A large amount of the museum material is also available for illustration. The physiological laboratory is supplied with the Harvard apparatus and such pieces as the sphymograph, cardiograph, stethoscope, sphygmomanometer, hæmocytometer, hæmometer and Gower-Haldane hæmoglobino-meter, Lombard's modification of Mosso's ergograph, and spirometer.

The equipment for Bacteriology includes incubators, Arnold steam sterilizers, autoclav, hot-air sterilizers, Becker balance, Trøemner media scale, centrifuge, animal holders, culture jars, water sampling apparatus, inoculating water baths, counting apparatus, and other appliances essential to the work. For botanical courses clinostats, auxinometers, and a variety of smaller apparatus are provided.

THE HERBARIUM occupies a room in the Biological Department. The nucleus consists of a Colorado herbarium purchased from Marcus E. Jones, and later enlarged. The larger part of the present collection is the Edward Tatnall herbarium, presented to the College by Miss M. H. Tatnall, of Elmira, N. Y. This collection, of about 22,000 species and varieties, includes representatives of all the great plant groups. Of these there are some 900 Algæ, 1,700 Lichens, 2,000 Bryophytes, 1,050 Pteridophytes, and 16,350 Angiosperms. These speci-

mens, carefully and fully labeled, were collected in 23 different states, Canada, Sweden and England, by 65 collectors. A catalogue makes the herbarium especially valuable.

CHEMISTRY.

THE CHEMICAL LABORATORIES include: (1) The General Laboratory; (2) the Qualitative Laboratory; (3) the Quantitative Laboratory; (4) the Organic Laboratory; (5) the Assay Laboratory; (6) Laboratories for gas and fuel analysis—spectroscopic and polariscopic work—biochemical analysis—photographic operations—balance room, etc., each furnished with adequate and appropriate appliances for general and research work.

GEOLOGY.

The general laboratory is provided with five large models and relief maps for the illustration of river work, glaciation, and vulcanism, together with a complete set of the geological folios of the United States Geological Survey, and more than 1,000 topographic maps. Suites of rock specimens are provided, covering all the main types of the igneous, sedimentary, and metamorphic rocks, as well as representative specimens from important mining districts in Colorado. A carefully prepared collection of thin sections of rocks is available for microscopic study, covering the varieties of the igneous rocks and illustrating their mineralogy. Seibert petrographic microscopes are provided.

In the mineralogical laboratory a general collection of 175 minerals illustrates the crystal forms and the variations in the massive kinds. Each student is given a working collection. Crystallography is taught by means of 150 models of crystals in wood and by the aid of a small collection of transparent models.

For the work in paleontology the collections of fossils in the College museum are employed, together with the departmental collection. They are representative of a large number of the genera in the several classes of invertebrates, and also of many of the extinct vertebrates.

PHYSICS.

The general equipment of the laboratory is represented by the experiments of Millikan's "*Mechanics, Molecular Physics, and Heat*," and Millikan and Mills's "*Electricity, Sound, and Light*." There are also a large standard clock with a Shedd magnetic contact maker, a standard H. J. Green barometer presented by General Palmer, a Gärtner cathetometer, a recording chronograph, a standard meter and balances, and calipers and thermometers for precision work.

For advanced work in Electricity the equipment of the Electrical Engineering Department is available.

A photometer room with a Lummer-Brodhun photometer and a three-meter track is part of the equipment of the laboratory for work in light. There is also a large Michelson interferometer, several spectrometers, and an optical bench.

The lecture room of the Physics department is furnished with the most modern Bausch and Lomb Convertible Balopticon for the projection of transparent slides and for opaque objects such as photographs and drawings. The apparatus for experimental demonstration purposes is especially complete. Much of it has been imported from Max Kohl. There is a projection apparatus for polarizing light phenomena; a wireless telegraph set; a Tesla coil presented by Dr. Gerald B. Webb, of Colorado Springs; a collection of Crookes and Geissler tubes; a large Toepler-Holtz machine presented by the Alumni Association of Colorado College; several Wimshurst machines and an induction coil; and special apparatus for demonstration of phenomena in heat, sound, and mechanics.

PSYCHOLOGY.

The equipment includes the following: Azoux dissectible model of human brain; Deyrolle "*Deux Demi-Tête*," showing distribution of cranial nerves; Deyrolle model of the spinal cord in cross section, much enlarged; Deyrolle model of the cord *in situ*, showing connections with the sympathetic system; lantern slides of gross and microscopic structure of the nervous system. Models of the sense-organs are available from the Department of Biology, and cranial casts and crania of various races and animals from the Museum.

The laboratory contains all the apparatus for courses in experimental psychology, special apparatus for intelligence tests, and for research work.

In addition to the regular equipment of the laboratory, the department of psychology has a shop equipped with a South Bend lathe, wood-working, metal working, jewelers' and watch-making tools. The shop is used for the repairing of apparatus, the building of new apparatus, and for making special pieces needed in research work.

THE SHOPS.

The shops have line shaft drive, power being obtained from an electric motor, or steam engine. A supply of compressed air may be

used for pneumatic tool work, gas furnaces, or cleaning. Tools are kept in a central tool room in charge of an assistant.

1. *Wood Shop*.—The wood shop is equipped for all bench work and speed lathe work in making patterns. Equipment is also provided to mould such patterns as are made. Power tools are driven from line shaft.
2. *Forge Shop*.—The forge shop provides facilities for all hand forging of iron and steel. Blast for the forges is furnished by a power-driven blower.
3. *Machine Shop*.—Machine shop equipment includes engine lathes, universal milling machine, planer, shaper, universal tool grinder, and a large assortment of attachments. The small tool equipment is kept in the tool room.

CIVIL ENGINEERING LABORATORIES.

1. *The Testing Laboratory*.—A room in the Mechanical Laboratories building has been assigned for the testing of materials of construction. Here is mounted a 100,000-pound Riehle testing machine for making tension, compression, shearing and transverse tests, and an abrasion cylinder for testing paving material; both machines are driven by a five-horse-power Crocker-Wheeler motor. In addition to other accessory apparatus a Henning extensometer is available for tension tests, and an Olsen compression micrometer for compression tests, each instrument reading to one-ten-thousandth of an inch.
2. *The Cement Testing Laboratory* in the basement of Cutler Hall is equipped with a Fairbanks testing machine, Vicat indenting apparatus, sand and cement sieves, briquette moulds, cube moulds, Gilmore's needles, running-water, storage tanks, and other apparatus requisite for investigations in the nature and physical properties of cement and cement mortars.
3. *The Hydraulic Laboratory* is in the basement of Cutler Hall. The equipment includes a 1,500 gallon tank with weir notch; rectangular, trapezoidal and triangular weirs of various sizes; a complete installment for the determination of hydraulic constants of flow through orifices and short tubes; a 3-inch Venturi meter and four displacement meters of different types; a hydraulic ram installation; pressure gauges and differential gauges, thermometers, etc.; as well as portable weighing tanks

and scales. To further illustrate the principles of hydraulics and power application there is a 9-inch Leffel turbine in a cast iron case, and a small centrifugal pump operated by a 12-inch Doble impulse water motor.

4. *The Blue Print Room* is on the third floor of Cutler Hall. It is equipped with daylight printing frames for making blue prints or blue line prints up to 30x42 inches in size, and suitable facilities for washing and drying the prints.

SURVEYING.

The Department possesses a complete working equipment of engineers' field instruments, including four plain transits, two railroad transits, a K. & E. complete transit, two Berger mining transits with interchangeable tops and side telescopes, a Saegmuller transit with solar attachment, a Young and Sons mining transit with top telescope and Smith solar, a Buff and Buff triangulation transit of the U. S. Coast and Geodetic Survey pattern, a surveyor's compass, a Burt solar compass, four wye levels, two dumpy levels, a plane table with telescopic alidade, a traverse table, a U. S. Navy pattern sextant, as well as smaller instruments and accessories.

Summer School of Surveying.—Field work in surveying is done under exactly the same conditions that prevail in actual practice. This work is carried on as a continuous exercise of four weeks' duration at Manitou Park, immediately after the close of the regular College exercises, at the end of the Freshman and Junior years. The work is done under the direction of the head of the Civil Engineering Department and a corps of experienced assistants.

The College furnishes living accommodations for the students. Students provide their own bedding.

ILLUSTRATIVE APPARATUS AND MATERIAL.

Lantern Slides, Photographs, and Trade Catalogues.—The Department has a representative collection of lantern slides on steam engineering, machine design, metallurgy, and electrical engineering; and blue prints, photographs and descriptive data of various engineering structures. The department drafting rooms contain complete reference files of catalogues and blue prints pertaining to their special engineering branches, which are freely used in connection with those courses requiring design work.

Geometrical Models and Balopticon.—For illustrating subjects in descriptive geometry and graphics there are in the drafting room a number of models prepared by students, including half a dozen thread models of ruled surfaces, bridge trusses, and machines. In the mathematical class-room there are a number of models of wood and plaster of Paris. The Department also has a Bausch and Lomb Balopticon of the latest pattern, by means of which photographs, cuts from magazines and newspapers, and any small drawing, up to 5x7 inches in size may be projected directly upon the screen without the necessity of having lantern slides made.

ELECTRICAL ENGINEERING LABORATORIES.

1. *The College Power Plant* is available for the purposes of the Electrical Engineering Department. The plant has four G-E compound-wound 115-volt direct current generators with a total capacity of 110 kilowatts.
2. *The Electrical Engineering Laboratory* has eight direct current dynamos, ranging in size from 1 kilowatt to 20 kilowatts, giving a range of type and capacity for a good laboratory demonstration of fundamental principles and commercial methods of test. The alternating current machinery consists of a rotary converter, four synchronous dynamos, two induction motors, a series motor, and ten transformers, ranging from 5 to 15 kilowatts in capacity. For making measurements there is about two thousand dollars' worth of the best types of direct or alternating current voltmeters, ammeters, wattmeters, shunts, and instrument transformers. These instruments are calibrated in the Electrical Testing Laboratory.
3. *The Electrical Testing Laboratory* has a very good equipment for the measurement of resistances, inductances, and capacities, for the determination of magnetic properties of iron, and for the calibration of direct and alternating current measuring instruments.

THE MANITOU FOREST—A FIELD LABORATORY IN FORESTRY.

The Manitou Forest is a tract of 6,000 acres, situated twenty-seven miles from Colorado Springs and about eighteen miles north of Pike's Peak. It is reached by the Colorado Midland Railroad to Woodland Park, twenty miles, and then by stage, seven miles. It is within the

boundaries of the Pike National Forest. Camp Colorado, a group of cottages used in conjunction with the School of Engineering, makes a most convenient and homelike center for the field courses.

The Forest is under the direct supervision of the School of Forestry. It affords unusual opportunities for study and practical experience in the field. This tract has a good stand of Western Yellow Pine and Douglas Fir. Much of the timber is mature, and logging and milling operations are now being carried on. The students are given opportunity, under the direction of the Forestry Department, to take part in all the phases of the treatment and management of the forest.

The College has a good working equipment of axes, saws, calipers, surveying instruments, meteorological instruments, and such other apparatus as is needed in the study and care of the forest.

OBSERVATORY AND METEOROLOGICAL STATION.

THE OBSERVATORY has a telescope of four-inch aperture, presented by Mr. Henry R. Wolcott, of Denver, a transit and a sidereal clock, both given by the late Charles S. Blackman, of Montreal, Canada. The College Meteorological Station, now in Hagerman Hall, is well equipped with recording instruments. The largest of these instruments, the quadruple register, given by the late General William J. Palmer, records minute by minute the direction and velocity of the wind and the sunshine and rainfall. In shelters are instruments for measuring and recording temperature and humidity. A Draper barograph, given by the late Dr. S. E. Solly, affords a continuous record of the atmospheric pressure. In Coburn Library are bound records of the beginning of the meteorological library, valuable accessions to which have been received from the late General Palmer.

Special information has been furnished on request to the city engineer and to several railway companies, while tabulated statements of the current weather are supplied regularly to the local newspapers, to the city health officer, and through the Chamber of Commerce, to various applicants at home and abroad who desire them for publication.

MUSEUM.

EDWARD ROYAL WARREN, DIRECTOR.

The Museum is on the second floor of Palmer Hall. Glass showcases extend on all sides of the room. The central part is taken up with the larger specimens. The megatherium stands in the west half, and the mounted skeleton of a whale occupies the eastern portion.

Grouped around them are the large natural history specimens, casts of noted fossils, and at intervals are showcases for small specimens.

The foundation of the Museum was laid by the gift of Winfield S. Stratton.

PALEOBOTANY is represented by two cases of Carboniferous, Cretaceous, and Oligocene plant remains classified by Mr. Baker.

PALEONTOLOGY.—Several cases are given up to the display of the invertebrate fossils, which are zoologically arranged. The collection contains typical and rare forms of foraminifera, corals, crinoids, brachiopods, mollusca, and arthropoda. The mollusca and echinoderms collected by Prof. Cragin are for the most part from the lower Cretaceous. The mollusca from the Atlantic slope, presented by Prof. Wm. B. Clark of Johns Hopkins University, are chiefly Tertiary. Besides an excellent geological record, the collection contains a series of casts of noted specimens.

The foundation for the collection in vertebrate paleontology was laid by the purchase for the college of the large paleontological cabinet of Prof. Cragin by General Wm. J. Palmer and the Colorado Springs Company. This collection consists of some 8,000 specimens from Colorado, Kansas, Indian Territory, Texas, and other states, and includes remains of Pliocene horses, llamas, Miocene rhinoceroses and mastodons, Cretaceous saurians, and tertiary fishes. It is of importance not only as supplying a large part of the geological record not otherwise represented in the Museum, but also as containing the types of many new species and some new genera of fossils. Among these type fossils the most important is the large plesiosaurian reptile *Trinacromerum*, the type of a new genus and species described from the Cretaceous of Kansas in 1888. Another valuable item of the collection is the extensive series of casts of fossil vertebrates given by W. S. Stratton. These casts include such forms as the Ichthyosaurus, Archaeopteryx, Glyptodon, Dinotherium head, Elephas heads, Mastodon head and tusks, Megatherium and restorations of the Colossochelys, Plesiosaurus, Mammoth, and other forms.

ZOOLOGY.—The collections of Invertebrate Zoology occupy a series of table cases along the south side of the room. They comprise representatives of the different groups, such as the Protozoa, Cœlenterata, Mollusca, etc. These have been recently rearranged and provided with descriptive labels which it is hoped will be found useful to students.

A representative series of the Myxomycetes or Mycetoza of Colorado, collected by Dr. Sturgis and Mr. Ellsworth Bethel, have recently been added to these collections, and Professor Schneider has presented a large series of the Butterflies and Moths of Colorado mounted in Denton tablets.

Vertebrates are well represented by the large natural history collection received through the generosity of W. S. Stratton. It contains 29 species of fishes, among which are the blue-shark, a few ganoids, and several curious tropical forms. Among the 23 species of reptiles, the most important are the Indian crocodile, python, iguana and the gila monster. The collection includes 442 species of birds, including such interesting forms as the ostrich, cassowary, Australian crane, apteryx, and Argus pheasant. The ornithology of all parts of the world is represented by the more striking forms. The mammals number 170 and include a group of mounted orangutans, a group of all known genera of marsupials, the Indian elephant, rhinoceros, nyghau, polar bear, and a complete mounted skeleton of a large whale.

Through the generosity of General Wm. J. Palmer, the Museum has acquired the unrivalled collection of Colorado and other birds accumulated during the past thirty-five years by Mr. C. E. Aiken of this city. About one hundred and fifty of these have thus far been mounted for exhibition and are displayed in one of the wall cases on the south side of the Museum. The rest of the collection is in the form of skins, and is arranged in two large cabinets in the Director's room; it is available for study by any one who wishes to make use of it. All the birds are fully labeled and a complete card catalogue has been prepared.

A small collection of bird's eggs, mainly the gift of Ivan C. Hall, of the class of 1908, has been placed on exhibition.

A collection of Colorado Mammals is being made. This now contains over fifty mounted specimens of local species, and additions are being made. These are exhibited in the case next to the Aiken birds.

A study collection of mammal skins has also been added. These are in a cabinet in the Director's room.

A collection of Colorado fishes, amphibians, and reptiles, has been begun. They are in a show case in the large hall.

MINERALOGY.—The collection in mineralogy occupies the north side of the room and includes 1,450 specimens of minerals, common, commercial and rare.

ETHNOLOGY is represented by a series of casts of skulls and brains of different peoples. The series also contains 125 masks of South Sea Islanders and 25 framed pictures of different races.

ANTHROPOLOGY.—The anthropological department contains a large amount of pottery from Missouri, New Mexico, and Peru; the Taos Pueblo, Pueblo Bonito, and DeChelly ruins are reproduced in miniature. The Bixby-Lang and Deane collections from the Cliff-dwellings were received through General Palmer. The Bixby-Lang collection was made in Southeastern Utah and Northern Arizona during the years 1897-'98. The collection includes almost 500 specimens of pottery, implements, skulls, and mummies. The specimens of pottery are exceptionally well preserved. The Deane collection was made in Western New Mexico and includes over 800 specimens of pottery, implements, skulls, and idols.

There is also a collection of Egyptian antiquities received from the Egyptian Exploration Society, of which Colorado College is a member.

RELIGIOUS LIFE.

The College is distinctly Christian, and recognizes character as the highest attainment. It is unsectarian in its management. Entering students are asked what their denominational affiliations are, and what churches in the city they desire to attend; lists are sent to the pastors of these churches, who seek out the students and bring about them the influence of church homes. Morning prayer, at which attendance is required of all students, is held in the chapel daily, led by different members of the Faculty. Twice a week questions bearing directly on student problems are discussed by members of the Faculty and other invited speakers.

In September, 1911, the College Vesper Service was established. It is held every Sunday afternoon during term time at five o'clock. A vested choir of twenty-four voices leads in the music under the direction of Mrs. J. S. Tucker. The attendance of students is not required, but there is a large voluntary attendance.

The list of preachers during the year 1916 was as follows:

President James A. Beebe, D.D.

President Nicholas Murray Butler, LL.D., Litt.D.

Dean Florian Cajori, LL.D.

Professor Thomas Nixon Carver, LL.D.

President Ozora Stearns Davis, LL.D.

Mr. Harry Ewing.

The Reverend Professor David Fales, Jr.

President Livingston Farrand, M.D., LL.D.

The Reverend Samuel Garvin, D.D.

The Right Reverend Paul Jones, D.D.

The Very Reverend H. Martyn Hart, D.D.

The Right Reverend Francis J. McConnell, D.D., LL.D.

The Reverend Frederick W. Oakes.

The Reverend Professor Edward S. Parsons, L.H.D.

The Reverend Professor Francis Greenwood Peabody, D.D., LL.D.

The Reverend Wilfrid A. Rowell.

The Reverend Frank M. Sheldon.

President William F. Slocum, D.D., LL.D.

The Reverend Merle N. Smith, D.D.

The Reverend Fred Staff.

The Reverend Allan A. Tanner.

The Reverend C. B. Wilcox, D.D.

At the beginning of the last college year, Colorado College took what it considers a long step forward in the development of its religious life, by calling the Rev. David Fales, Jr., to be the head of the Department of Bible and Religion. This department is to be the co-ordinating factor among the religious forces of the College; and will also serve as the medium for correlating the life of the College with the life of the churches of the city.

This department now offers, including the courses which Dean Parsons continues to give, a series of courses covering, in general, the subject of Biblical Literature. It also offers courses in Modern Religious Problems and in Community Problems; and Seminars, with field work in Practical Applied Christianity; all of which not only serve as preliminary study for those who expect to enter religious and social activity as a life-work, but also provide a link between the class-room work of the Department and the religious activities of all students.

It is a definite part of Mr. Fales' duties to have oversight of all these activities, to be of help to individual students along the lines of the personal problems of religion and service, and to be the adviser of the Christian Associations. This responsibility the College feels should be in the hands of one who has had successful experience in the direction of religious activities, and of one, moreover, who has a position of permanence in which constructive and cumulative results can be obtained.

The Student Volunteer movement is represented. Of the former members of the band, some are continuing in other institutions their preparation for the foreign field, and others are already actively engaged in missionary work.

In the Spring of 1916, the Student Commission established a Social Service Employment Bureau, the function of which is to find students to help in the various forms of social and religious service in the city that need helpers; and also for finding similar work for students desiring to undertake it. A large number of the students are voluntarily engaged in various forms of work, such as Boys' Clubs, Settlements, Sunday Schools, Young Peoples' Societies, Day Nursery, Child Welfare, etc.

At the beginning of the College year, members of the Associations meet all trains and welcome new students.

STUDENT PUBLICATIONS.

The Tiger, a semi-weekly newspaper, is issued by an editorial board composed of College students. An annual, *The Pike's Peak Nugget*, is published by the Junior class. A *Handbook* of information is issued at the beginning of the College year.

LITERARY SOCIETIES.

The Apollonian Club and the Pearsons Dramatic Club, composed of young men; the Minerva Society, the Contemporary Club, and the Hypatia Society, composed of young women, hold weekly meetings for debate and other literary work.

FORESTERS' CLUB.

A Foresters' Club meets fortnightly during the winter term to consider current events in forestry and discuss papers of professional interest.

THE STUDENT COMMISSION OF COLORADO COLLEGE.

By a charter adopted in the autumn of 1915, a Student Commission was created, composed jointly of delegates from the various student organizations and of officers elected by these delegates. The object of the Commission is to provide a representative body of students which, by virtue of the position and influence of its members in student affairs, shall be able to supervise and control all non-academic activities of the student body as a whole.

ORATORICAL AND DEBATING CONTESTS.

All contests in public speaking are in charge of the Department of Public Speaking and the Manager of Debating. Two intercollegiate debates are held during the second half-year. This year there has been inaugurated a debate between representatives of the Freshman and Sophomore classes.

PHI BETA KAPPA.

A charter of the Phi Beta Kappa Society was granted to Colorado College in 1904. The object of the society is the promotion of scholarship and friendship among students and graduates of American colleges. The members of the Society are elected primarily from the best scholars of the graduating classes of the College; secondly, from the graduates of the College whose work after graduation entitles them to such honor; and lastly from any persons distinguished in letters, science, or education. In addition to scholarship, power of leadership and good moral character are the qualifications for membership.

Recently the rules of election to membership have been modified somewhat. Two members are elected from each Junior class. In the Senior year additional elections are made, increasing the total number to not more than one-seventh of the regular members of each graduating class in the College of Arts and Sciences. No student is eligible who does not take his Junior and Senior years in Colorado College.

THE COLORADO COLLEGE PUBLICATION.

Under this title is now included the scientific publication formerly issued as "COLORADO COLLEGE STUDIES," as well as the announcements of the various departments of the College, the annual catalogue, etc. This publication appears every six weeks during the academic year.

The following have been published during the academic year 1915-'16:

Science Series:

Vol. XII., No. 14. Soil Fertility—*Guy Wendell Clark.*

Social Science Series:

Vol. II., No. 12. The Relation of Scholarship to Partial Self-Support in College.—*Guy Harry Albright.*

Engineering Series:

- Vol. I., No. 13. The Effect of Altitude on the Heating of Electrical Machines.—*George B. Thomas.*
- No. 14. Field Practice in Surveying.—*Frank M. Okey.*
- No. 15. Shop Courses in Technical Education.—*Nelson R. Love.*
- No. 16. Notes on the Early History of the Slide Rule.—*Florian Cajori.*

Language Series:

- Vol. II., No. 31. The Value of Poetry in the Schools.—*Roger H. Motten.*

Bulletin Series:

- No. 48. Catalogue of Colorado College, 1916.

PUBLIC LECTURES AND READINGS.

In the Spring of 1916 a course of lectures on Rural Economics was given in Perkins Hall by Dr. Thomas Nixon Carver, exchange professor from Harvard University.

Throughout the winter and spring a series of readings was given on Monday afternoons in Palmer Hall by members of the Department of English and others.

Under the auspices of the Department of English, evening lectures and readings in Perkins Hall were given by Alfred Noyes, and Lady Gregory.

OFFICERS OF THE ALUMNI ASSOCIATION.

MRS. LESTER MCLEAN, JR., Colorado Springs.....	<i>President</i>
A. WATSON MCHENDRIE, Trinidad.....	<i>Vice-President</i>
ADDIE HEMENWAY, Colorado Springs.....	<i>Secretary</i>
FRED M. GERLACH, Colorado Springs.....	<i>Treasurer</i>

Executive Committee.

MRS. LESTER MCLEAN, JR.	FRED M. GERLACH,
A. WATSON MCHENDRIE,	LILLIAN M. JOHNSON,
ADDIE L. HEMENWAY,	HERBERT G. SINTON,
ALBERT R. ELLINGWOOD.	

EXPENSES.

Tuition by the year (except in department of Forestry).....\$80.00

Tuition in Department of Forestry:

Regular course for full year (ten months).....	80.00
Summer Course alone (four weeks).....	12.00

Students who register for less than eight hours of work pay the usual entrance fees, and \$10.00 for each half-year course. Anyone wishing to attend lectures or recitations without receiving credit upon the College records may secure the privilege of such attendance on the payment of \$5.00 for each half-year course.

Matriculation fee..... \$5.00

(From the above-named fees there is no rebate in case of withdrawal or dismissal.)

Athletic and "Associated Students" fee..... 5.00

*Board by the half-year in halls (for women)..... 75.00

Board in the Spring vacation, by the week..... 4.00

Board in Cossitt Hall (for men), average per week..... 4.50

Rooms, warmed, furnished, and lighted, by the year, for each occupant.....\$40.00 to 80.00

The standard rental is \$80. The number of rooms under that price is very limited. Application should be made early. Rooms are rented by the year, and will be retained for incoming students only when the application is accompanied by a deposit of \$5.00. This fee will be credited on the bills for room rent, and will be refunded only in case the room is given up by September first.

No young woman will be received into the halls who is not of full college rank, who is less than sixteen years of age, and who is not taking at least fifteen hours' work or its equivalent. Young women from out of town are required to live on the campus.

The women's residence halls are usually closed during the Christmas recess for cleaning and repairs.

Young men who room off the campus can obtain rooms at prices similar to those charged by the College.

Students who room in the College residences are required to furnish towels, bed linen, and blankets.

Nurse's fee (for young women only): see p. 104..... \$5.00

Fees of College physician:

Office consultation..... .50

Visits to rooms..... 1.00

Infirmery fee (including meals), a day..... 1.00

*Owing to the increased cost of living, it may become necessary to make a slight increase in the price of board at Bemis Hall, due announcement of which will be made.

For prolonged illness and in cases of contagious diseases, a special nurse is employed, and the expenses are charged to the patient.

The following is an estimate of the necessary expenses for the college year (not including matriculation fee, nurse's fee, cost of text-books, laundry, and incidentals):

Tuition, \$30 each half-year.....	\$60.00	\$60.00
Room rent, \$20 to \$40 each half-year.....	40.00	80.00
Board, \$75 each half-year.....	150.00	150.00
	<u>\$250.00</u>	<u>\$290.00</u>

In addition to these items, fees are charged for the use of apparatus and materials in the various laboratories, as follows: Biology, p. 52; Chemistry, p. 58; Civil 2, p. 58; Civil 82, p. 62; Electrical Laboratory, p. 69, Note; Geology (Course 2), p. 76; Physics, p. 88; Psychology, p. 85; Shop, p. 95; Field Courses in Surveying, p. 63. (These fees are paid directly to the respective departments at the beginning of each term.)

An additional charge of \$5.00 is made on the last term bill of the Seniors to cover expenses of graduation.

The bills for tuition, room rent, and board are issued at the beginning of each half-year, and are payable immediately. Students who withdraw before the end of the term pay full tuition. Students who withdraw less than six weeks before the end of the term pay full board and room rent. No deduction will be made for short absences during the term. In case of withdrawal more than six weeks before the end of the term, half of the room rent and the whole of the amount paid for board for the unexpired portion of the term will be returned to the student. The date of withdrawal is reckoned from the time when official intimation of the fact has been received from parent or guardian.

The College reserves the right to exclude at any time students whose conduct or academic standing renders them undesirable members of the college community; and in such cases the fees due the college are not refunded or remitted.

Remittances should be made by draft or money order.

The degree will not be granted to any student whose college bills are not paid before Commencement.

SCHOLARSHIPS.

The income of the following scholarships is devoted to the aid of worthy students who may need assistance in completing their course,

and who, by their scholarship and character, prove themselves worthy of such assistance:

The Thomas Davee Scholarship of \$500, established by the late Mrs. T. V. D. Mitchell, of West Minot, Maine.

The Rice Scholarship of \$700, established by friends of the Rev. Chas. B. Rice, D.D., of Danvers, Mass.

The Currier Scholarship of \$1,000 founded by the late Hon. Warren Currier, of St. Louis, Mo.

The Edwards Scholarship of \$500, given by the Congregational Church of Wellesley Hills, Mass.

The Mary Caroline Quincy Scholarship of \$500, given by the late George Henry Quincy, of Boston, Mass.

The Lawrence Myers Scholarship of \$1,000, and the Lucy Platt Myers Scholarship of \$1,000, given by Mrs. Lætitia M. Myers, of Plainfield, New Jersey.

The Fay Scholarship of \$1,000, founded by the late Eliza A. Fay, of Boston, Mass.

A Scholarship of \$1,000 given by Mr. William F. Richards of Colorado Springs, through the Woman's Educational Society of Colorado Springs.

The Willard B. Perkins Scholarship of \$7,000. The second Willard B. Perkins Scholarship of \$7,000. These two scholarships were given by the late Willard B. Perkins, of Colorado Springs.

The Hawley Scholarship Fund of the Woman's Educational Society, now amounting to about \$10,000, founded by the will of Mrs. Mary R. Hawley, of Baltimore, Md., the annual income of which is used in the payment of scholarships of such young women of the College as the Faculty may recommend, preference being given to daughters of home and foreign missionaries.*

The Hawley Scholarship Fund of Colorado College, now amounting to about \$9,000, founded by the will of Mrs. Mary R. Hawley, of Baltimore, Md., the annual income of which is used in the payment of scholarships for such students of the College as the Faculty may recommend who may be fitting themselves for distinctively Christian work.*

*Students who desire to have their names considered, must make application.

The Hawley Memorial Fund, now amounting to about \$9,000, founded by the will of Mrs. Mary R. Hawley, of Baltimore, Md., in memory of her husband, Mr. Martin Hawley, the annual income of which is loaned to "worthy and deserving students of the College, as the Faculty may see proper."

The Strettell Memorial Fund of \$2,000, given by Mrs. Alma G. V. Harrison, of London, England, and General William J. Palmer, of Colorado Springs, in memory of Mr. Arthur E. V. Strettell, Mrs. Harrison's brother, who died in Colorado Springs in 1882. The income of this fund is to be used to aid students suffering from lung troubles.

The Mary G. Slocum Scholarship of \$100 a year, given by the Woman's Educational Society of Colorado College. This scholarship is awarded on the basis of competition to young men of the Junior Class.

The Ruth Danforth Scholarship of \$1,000, established by Mrs. Emma Danforth Wiley, of Colorado Springs.

The Emma Danforth Wiley Scholarship of \$1,000.

The Elizabeth C. McAllister Scholarship of \$1,000, established by members of her family.

Several other scholarships are supported by annual subscriptions.

SELF-SUPPORT.—Advanced students of high standing have occasional opportunities for private teaching. Capable and faithful young men can usually find work in town. During the present year the Employment Bureau of the College has secured about 250 positions for students. A limited amount of service in Bemis Hall is offered to young women; this is not often available for first-year students.

THE WOMAN'S EDUCATIONAL SOCIETY.

This Society was formed in April, 1889, by the women of Colorado Springs. Its purpose, as expressed in its constitution, "is to give physical, intellectual, and spiritual aid to students in any department of Colorado College." This Society built Montgomery Hall, furnished Ticknor and McGregor Halls, and has been of service in many ways to the College. It endeavors to help the members of the Faculty in their personal work for students, especially those who are self-supporting.

First.—Loans may be made in small amounts to worthy and deserving students in the Junior or Senior class of Colorado College on the recommendation of such officers of the College as are acquainted with their record.

Second.—No student shall be allowed to incur an indebtedness to the Society of more than \$300.00.

Third.—Students may receive loans without interest until their connection with the College ceases; after that time their notes shall draw interest at 4 per cent.

For the scholarships within the gift of the Society, see p. 123.

The officers for the current year are:

President—Mrs. William F. Slocum.

First Vice-President—Mrs. M. C. Gile.

Second Vice-President—Mrs. L. J. Skelton.

Third Vice-President—Mrs. F. E. Brooks.

Recording Secretary—Miss Marianna Brown.

Corresponding Secretary—Mrs. E. C. Hills.

Treasurer—Mrs. Florian Cajori.

Auditor—Willis R. Armstrong.

HOSPITAL FUND.

The Trustees of the Bellevue Sanitarium have given to the College nearly \$4,000 as the nucleus of a hospital fund for the students.

THE NEEDS OF THE COLLEGE.

Colorado College, never more truly than today, has great and pressing needs. Its growth during the last fifteen years has been steady and rapid, and its friends have generously assisted in helping to meet its constantly enlarging opportunity. If it is to do the work which legitimately belongs to it and have its part in meeting the educational demands of the great section of the country in which it is located, if it is to provide a thorough and broad training under positive Christian influences for those who are coming to it in constantly increasing numbers, not only from Colorado, but from the entire country, it must have in the immediate future larger resources than those upon which it has been obliged to rely during the last few years.

Among the pressing needs are the following:

General Endowment.—For the last ten years the College has been doing a work equal in amount and quality to that done by older eastern institutions possessing a much larger endowment. In consequence each year a deficit has had to be faced. A much larger sum than it has at present must be provided if the College is to go forward to fill its place in the educational life of the country.

Professorships.—It is hoped that one form in which this larger endowment will be bestowed is in the provision of permanent funds for individual professorships.

Funds for the Library.—The library has only a few hundred dollars of permanent funds. It must rely for increase upon gifts and upon purchases made out of current expense funds to meet the absolute requirements of the different departments. There is an imperative need for money to be used at once in the filling of gaps in the material the library already possesses, and also for permanent funds from which additions may be regularly made in accordance with the varied intellectual needs of the College.

Special Funds for Scientific Research.—Money to be devoted to scientific work in special lines is very greatly needed. The opportunities of Colorado College in this direction are unusual, because of the geographical, meteorological, and geological situation. The attention of those interested in the advancement of science is earnestly called to this fact.

Funds for the Department of Engineering.—This department of the College needs a considerable sum of money to be immediately expended in the proper development of its work, and also a large endowment fund to secure its stability and future growth. Large gifts bestowed for these ends will directly aid in the development of the rich resources of Colorado and the adjoining mountain states.

Scholarships.—The Trustees desire to emphasize the fact that many young people in a new country are obliged to earn their education by hard and self-denying work. Colorado College still needs a large addition to her scholarship funds. Money thus applied tends directly to the profit of the individual and of the country.

Fellowships.—It would be of great value in developing higher standards of scholarship if several graduate fellowships in various departments could be established.

Infirmary.—The Infirmary in Ticknor Hall, which is available for young women only, is inadequate to the growing needs of the College. There should be provided a separate building, in which contagious diseases can be cared for, as well as ordinary cases of illness. A fund has been started for the endowment of a cot, for use in case of illness among students who are working their way. Additions to this fund are an urgent need.

FORMS OF BEQUEST.

Those who intend to devise property to Colorado College, or to the Woman's Educational Society, are requested to employ one of the following Forms of Bequest:

"I hereby give, devise, and bequeath, unto The Colorado College of Colorado Springs, Colorado, the sum ofDollars."

"I hereby give, devise, and bequeath unto the Woman's Educational Society of Colorado College, of Colorado Springs, Colorado, the sum ofDollars."

If property other than money is willed, the form should be correspondingly varied.

Commencement, 1916

Award of Honors

HIGH HONORS.

Jacob Roeser, Jr., '16	Myriam Christy Garrett, '17
William Ralph Smythe, '16	Geraldine Stone, '17
Charles Edgar Taylor, '16	Adele Frederica Vorrath, '17
Ruth Graham Collins, '17	Edith Irene Glassford, '18
Edwin Frickey, '17	Paul Myron Hamilton, '18
Charles Thompson Crockett, '19	

HONORS.

Frank Edward Evans, '16	William Armstead Campbell, '18
Lucy Cornelia Jewell, '16	Lysle Winston Cooper, '18
Dorothy Mueller, '16	Frances Emma Dworak, '18
Rose Miriam Gill, '17	Ernest Amos Johnson, '18
Marjorie Helen Whipple, '17	Dorothy Crofts Loomis, '18
Horace Jay Wubben, '17	John Allen McDougall, '18
Matsusaburo Yokoyama, '17	Marion Naomi Mendenhall, '18
Carol Worthington Adams, '18	Thornton Henry Thomas, Jr., '18
Alma Louise Barber, '18	Marjorie Lucretia Anna Davis, '19
Cyrus Gambrill, '19	

Award of Scholarships

PERKINS SCHOLARS.

Edith Irene Glassford, '18	Ernest Amos Johnson, '18
Edwin Frickey, '17	

MARY G. SLOCUM SCHOLAR.

Raymond Waldron Maxwell, '17

PHI BETA KAPPA ELECTIONS.

CLASS OF 1916

JUNIOR ELECTIONS.

Frank Edward Evans	Lois Steuerwald
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SENIOR ELECTIONS.

Cecil Henry Graves	Bertha Merea Pick
Charles Allison Harrison	Willard Cherrington Ross
Ruth Higgins	Lois Elizabeth Smith
Lucy Cornelia Jewell	William Ralph Smythe
Charles Trowbridge Latimer	Charles Edgar Taylor

CLASS OF 1917.

JUNIOR ELECTIONS.

Edwin Frickey	Myriam Christy Garrett
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Degrees Conferred, Commencement, 1916

DEGREES IN COURSE.

MASTER OF ARTS.

Harold William Gregg

BACHELOR OF ARTS.

Magna cum Laude.

Frank Edward Evans
Lucy Cornelia Jewell
Bertha Merea Pick

William Ralph Smythe
Lois Steuerwald
Charles Edgar Taylor

Cum Laude.

Bertha May Bancroft
Evelyn Estabrook
Cecil Graves
Charles Allison Harrison
Charles Trowbridge Latimer
Helen Leipheimer

Mildred Long
Floyd Franklin McCammon
Dorothy Mueller
Lois Elizabeth Smith
Eva May Sprengle
Margaret Emily Stanard

Allward, Charlotte Pearson
Barnett, Margaret Elizabeth
Barney, Martin Davis
Bartlett, Harriet Morgan
Becker, Bernard Carl
Bejach, Maurice Dilliard
Bennett, Hila India
Bowman, Bernice Olive
Brooks, Hattie Estella
Caldwell, Blanche Edna
Cheley, Glen Evan
Christy, William Glen
Coltrin, Charles Wesley
Conrad, Mary Salome
Crissey, Marjorie
Cunningham, Rachel
Dixon, John Philip
Eaton, Elizabeth June
Fuller, Lillian Eliza
Gault, Elva Maude
Geissler, Anna Louise
Hadley, Edna Margaret
Hall, Frank Herbert
Hallock, Rachel Maryette
Hamilton, Edith Magill
Heald, Helen Carolyn
Henderson, Isabel Corbin
Hensley, Mary Olive
Higgins, Ruth

Holm, Agnes Marie
Holmes, Charles Ludswell
Hubbell, Elizabeth Guion
Johnson, Elva Caroline
June, Perry Ellsworth
Keener, George Herring
Kirkwood, Helen Grace
Kramer, Harry Stillman
Mimmack, Rufus Frederick
Morse, Levi Parminter
Nelson, Robert Rutherford,
Pooler, Dorothy Hazel
Ransdell, Hollace Vivian
Ritterman, Chloie M.
Ritterman, Ralph W.
Roberts, Ivor Simpson
Ross, Willard Cherrington
Savage, Laura Ada
Savage, Lucy Eunice
Seeley, Charles Kingery
Sweetser, Mary Louise
Taylor, Clarion Wells
Thompson, Jeannette
Turner, Merrill Henry
Van Diest, Alice Elfrieda
Watson, Elmo Scott
White, Lavina Belle
Winternitz, Elizabeth

BACHELOR OF ARTS IN BANKING AND BUSINESS ADMINISTRATION.

Balch, Harry Hughes

Esmiol, Morris Alfred

Evans, Frank Edward

Greenlee, Lawrence Albert

Walker, Prudence May

BACHELOR OF SCIENCE IN CIVIL ENGINEERING.

Hyde, James Francis Clark

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING.

McCammon, Floyd Franklin

Williams, Russell Ventres

FOREST ENGINEER.

Roeser, Jacob, Jr.

DIPLOMAS IN MUSIC.

Fischer, Claribel Ben Hur

Leslie, Myrtle

Students

GRADUATE STUDENTS.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Harry Lee Black, A.B. Colorado College, '12	<i>Colorado Springs.</i>	School for Deaf and Blind.
Harold Thayer Davis, A.B. Colorado College, '15	<i>Colorado Springs.</i>	21 E. Caramillo St.
George Wesley Dennis, A.B. Colorado College, '15	<i>Loveland, Colo.</i>	1122 N. Cascade Ave.
Harold, H. Gile, A.B. Princeton, '15	<i>Colorado Springs.</i>	1121 N. Tejon St.
Cecil Henry Graves, A.B. Colorado College, '16	<i>Colorado Springs.</i>	1222 Lincoln Ave.
Octavia Irene Hall, A.B. Colorado College, '13	<i>Colorado Springs.</i>	1440 Wood Ave.
Edward E. Hedblom, A.B. Colorado College, '12	<i>Aurora, Neb.</i>	318 E. St. Vrain St.
Charles Trowbridge Latimer, A.B. Colorado College, '16	<i>Colorado Springs.</i>	923 N. Wahsatch Ave.
Robert Allen Pollock, A. B. Muskingum College, 1909.	<i>Colorado Springs.</i>	18 E. Espanola St.
Henry Charles Rehm, LL.B., Univ. of Wisconsin, 1899; B.D., Oberlin Seminary, 1906.	<i>Colorado Springs.</i>	929 N. Nevada Ave.
Clarion Wells Taylor, A.B. Colorado College, '16	<i>Colorado City, Colo.</i>	225 E. Jefferson St.

SENIORS.

Belk, Dorothea	<i>Denver, Colo.</i>	Bemis Hall.
Bispham, Miriam Freeman	<i>Colorado Springs.</i>	19 E. San Miguel St.
Bowers, Hazel	<i>Colorado Springs.</i>	2008 N. Nevada Ave.
Boyd, Edith	<i>Colorado Springs.</i>	1220 N. Tejon St.
Bradley, Ruth Elizabeth	<i>Colorado Springs.</i>	430 W. Pikes Peak Ave.
Brooks, Adin Paul	<i>Colorado Springs.</i>	1820 Washington Ave.
Brooks, Effie Maria	<i>Brookston, Colo.</i>	Bemis Hall.
Bryson, Florence June	<i>Pueblo, Colo.</i>	Bemis Hall.
Caldwell, Helen Elizabeth	<i>Brookings, S. Dak.</i>	Bemis Hall.
Carlson, Georgia May	<i>Denver, Colo.</i>	Bemis Hall.
Carnahan, Mary Kathryn	<i>Rico, Colo.</i>	Bemis Hall.
Carrick, Mattie Louise	<i>Colorado Springs.</i>	1430 N. Weber St.
Clemans, Martha Elizabeth	<i>Colorado Springs.</i>	17 E. Dale St.
Collins, Ruth Graham	<i>Colorado Springs.</i>	Bemis Hall.
Cunningham, Blanche Agnes	<i>Denver, Colo.</i>	Bemis Hall.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Dawson, Ruth Elizabeth	<i>Denver, Colo.</i>	Bemis Hall.
Deutschbein, Joseph Anton (B)	<i>Haarlem, Holland.</i>	1506 N. Tejon St.
Dockstader, Henry Peter (E)	<i>Colorado Springs.</i>	1316 N. Nevada Ave.
Dudley, Donald Ashworth (E)	<i>Colorado Springs.</i>	14 Cheyenne Road.
Ewert, Earl Cranston	<i>La Junta, Colo.</i>	1129 N. Nevada Ave.
Flora, Harriette Pearl	<i>Colorado Springs.</i>	2129 N. Nevada Ave.
Frickey, Edwin	<i>Brush, Colo.</i>	519 N. Weber St.
Garnett, Anna Maud	<i>Pueblo, Colo.</i>	Bemis Hall.
Garrett, Myriam Christy	<i>Colorado Springs.</i>	710 N. Cascade Ave.
Garside, Benjamin Charles, Jr.	<i>Denver, Colo.</i>	1117 N. Nevada Ave.
Gebhardt, Glenn Leslie	<i>Canon City, Colo.</i>	Hagerman Hall.
Gill, Rose Miriam	<i>Vinita, Okla.</i>	Bemis Hall.
Graham, Marjory	<i>Pueblo, Colo.</i>	Bemis Hall.
Hamilton, Sara Grace	<i>Colorado Springs.</i>	315 E. Willamette Ave.
Harrison, Hazel Dawn	<i>Goldfield, Colo.</i>	Bemis Hall.
Hassell, Julia Frances	<i>Colorado Springs.</i>	1424 Wood Ave.
Henn, Samuel Chester, Jr.	<i>Paonia, Colo.</i>	1106 N. Weber St.
Holman, Newton Davis	<i>Colorado Springs.</i>	425 E. St. Vrain St.
Hunt, Winifred Belle	<i>Denver, Colo.</i>	Bemis Hall.
Hutchison, Mary Elizabeth	<i>Colorado Springs.</i>	732 N. Wahsatch Ave.
Joslin, Doyle	<i>Colorado Springs.</i>	530 E. Platte Ave.
Keating, Katherine	<i>Pueblo, Colo.</i>	Bemis Hall.
Keeth, Frances	<i>Colorado Springs.</i>	308 E. Platte Ave.
King, Bertha L.	<i>Montezuma, Ia.</i>	Bemis Hall.
Kingman, Victor Christie (E)	<i>Colorado Springs.</i>	514 N. Cascade Ave.
Lennox, Helen Virginia	<i>Colorado Springs.</i>	1339 N. Nevada Ave.
Mackay, Anne Louise	<i>Denver, Colo.</i>	Bemis Hall.
McKesson, William B.	<i>Colorado Springs.</i>	631 N. Weber St.
Martin, Earl Gilbert (E)	<i>Loveland, Colo.</i>	1111 Wood Ave.
Martin, Gladys Marian	<i>Colorado Springs.</i>	Bemis Hall.
Mason, Edith Parsons	<i>Colorado Springs.</i>	619 N. Prospect St.
Maxwell, Raymond Waldron	<i>Colorado Springs.</i>	1517 N. Weber St.
Merrill, Glen (F)	<i>Grand Junction.</i>	1319 N. Nevada Ave.
Merrill, Madre	<i>Colorado Springs.</i>	226 E. Monument St.
Meyer, Grace Rosella	<i>Colorado Springs.</i>	Bemis Hall.
Moseley, Helen Fern	<i>Pueblo, Colo.</i>	Bemis Hall.
Nate, Mildred Evans	<i>Champaign, Ill.</i>	324 E. Yampa St.
Neff, Kinzie Benewell (B)	<i>Delta, Colo.</i>	911 N. Nevada Ave.
Nicholson, Helen Louise	<i>Colorado Springs.</i>	110 S. Wahsatch Ave.
Nowels, Kenneth Busey	<i>Colorado Springs.</i>	721 W. Cucharas St.
Pearce, Virginia Lizette	<i>Brooklyn, N. Y.</i>	Bemis Hall.
Pennington, Loyd Alfred	<i>Colorado Springs.</i>	2208 N. Nevada Ave.
Perryman, Lora Arabelle	<i>Overbrook, Kans.</i>	611 N. Wahsatch Ave.

NAME.

HOME ADDRESS.

CITY ADDRESS.

Rawlings, John William	<i>Monte Vista, Colo.</i>	1122 N. Cascade Ave.
Richardson, Irma Maude	<i>Canon City, Colo.</i>	Bemis Hall.
Reed, Cecil David (E)	<i>Colorado Springs.</i>	111 E. San Miguel St.
Sager, Henry	<i>Custer, S. Dak.</i>	312 N. Cascade Ave.
Shadowen, Carl Albert (B)	<i>Ft. Morgan, Colo.</i>	1106 N. Weber St.
Shadowen, Ethel May	<i>Ft. Morgan, Colo.</i>	Bemis Hall.
Shuler, Winnifred	<i>Raton, N. Mex.</i>	Bemis Hall.
Slack, Arthur Benjamin (B)	<i>Lazaer, Colo.</i>	1117 N. Nevada Ave.
Spalding, John William (B)	<i>La Junta, Colo.</i>	1122 N. Cascade Ave.
Sumner, John Robert Carew	<i>Colorado Springs.</i>	230 E. Yampa St.
Tamayo, Fernando Carlos	<i>San Cristobel,</i> <i>Tachira, Venezuela.</i>	1029 N. Nevada Ave.
Taylor, Theron Jack (B)	<i>Colorado Springs.</i>	234 N. Chestnut St.
Touzalin, Charlotte Maurice	<i>Colorado Springs.</i>	1121 N. Nevada Ave.
Van Diest, Annette Josine	<i>Colorado Springs.</i>	719 N. Nevada Ave.
Vickers, Denver	<i>Colorado Springs.</i>	419 N. Wahsatch Ave.
Vorrath, Adele Frederica	<i>Colorado Springs.</i>	219 E. Fontanero St.
Walker, Bertha	<i>Grand Junction.</i>	Bemis Hall.
Wallrich, Florence Edna	<i>Alamosa, Colo.</i>	Bemis Hall.
Waples, Dorothy	<i>Cody, Wyo.</i>	Bemis Hall.
Whipple, Marjorie Helen	<i>Cheyenne, Wyo.</i>	Bemis Hall.
Williams, Lyle Gayle	<i>Colby, Kans.</i>	Bemis Hall.
Wilson, Beulah Glee	<i>Manitou, Colo.</i>	Bemis Hall.
Wubben, Horace Jay	<i>Colorado Springs.</i>	Broadmoor.
Yokoyama, Matsusaburo	<i>Mito, Japan.</i>	1130 Wood Ave.

JUNIORS.

Adams, Carol Worthington	<i>Ft. Collins, Colo.</i>	Ticknor Hall.
Alps, Bayard Garfield (B)	<i>Loveland, Colo.</i>	1122 N. Cascade Ave.
Baenteli, Gertrude Rosalie	<i>Colorado Springs.</i>	Ticknor Hall.
Baker, Sarah Emma	<i>Colorado Springs.</i>	1006 E. Platte Ave.
Baldwin, Jeffery Mathewson	<i>Oberon, N. Dak.</i>	911 N. Nevada Ave.
Barnes, Baron Salisbury	<i>Colorado Springs.</i>	1140 Wood Ave.
Bock, Adolph	<i>St. Joseph, Mo.</i>	632 N. Nevada Ave.
Bottler, Joseph Sebastian (B)	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Boucher, Paul Edward	<i>Colorado Springs.</i>	1014 N. Weber St.
Burgener, Charles Edward	<i>Loveland, Colo.</i>	1122 N. Cascade Ave.
Burlingame, Robert Miles	<i>Denver, Colo.</i>	1123 N. Weber St.
Campbell, Wm. Armstead, Jr.	<i>Colorado Springs.</i>	424 N. Nevada Ave.
Carpenter, Helen Bowen	<i>Mancos, Colo.</i>	Ticknor Hall.
Carrick, Eilene Gregory	<i>Colorado Springs.</i>	1430 N. Weber St.
Clark, Catherine	<i>Aspen, Colo.</i>	McGregor Hall.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Clough, Marie Catherine	<i>Colorado Springs.</i>	623 N. Tejon St.
Clover, Charles William (F)	<i>Clinton, Ind.</i>	219 E. Dale St.
Coffin, Dorothy Huntington	<i>Colorado Springs.</i>	620 E. Columbia St.
Coldren, Fred George (B)	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Cook, Nell	<i>Yoder, Colo.</i>	Ticknor Hall.
Crane, Dorothy Dunbar	<i>Ridgefield, Conn.</i>	McGregor Hall.
Cummings, Dwight A.	<i>Colorado Springs.</i>	502 High St.
Davis, William Jennings (B)	<i>Delta, Colo.</i>	1319 N. Nevada Ave.
Davison, Elizabeth Leavitt	<i>Colorado Springs.</i>	McGregor Hall.
Donaldson, Irene Brownlee	<i>Denver, Colo.</i>	Ticknor Hall.
Dunlavy, Eva Irene	<i>Trinidad, Colo.</i>	Bemis Hall.
Durbin, Helen Avery	<i>Denver, Colo.</i>	Ticknor Hall.
Durkee, Alpha Louise	<i>Manitou, Colo.</i>	Manitou, Colo.
Dworak, Alfred Vance (B)	<i>Longmont, Colo.</i>	1106 N. Weber St.
Dworak, Frances Emma	<i>Colorado Springs.</i>	1203 Grant St.
Field, Mildred	<i>Colorado Springs.</i>	422 E. Willamette Ave.
Freeman, Marie	<i>Colorado Springs.</i>	734 E. Boulder St.
Gardner, Lillian Eloise	<i>Silverton, Colo.</i>	228 E. Yampa St.
Gates, Lillian Carpenter	<i>Sapulpa, Okla.</i>	Ticknor Hall.
Gilliland, Harold Edward (B)	<i>La Junta, Colo.</i>	1319 N. Nevada Ave.
Glassford, Edith Irene	<i>Grand Junction.</i>	McGregor Hall.
Glezen, Lee Louis (E)	<i>Colorado Springs.</i>	727 N. Wahsatch Ave.
Hale, Gladys Fern	<i>Rocky Ford, Colo.</i>	McGregor Hall.
Hamilton, Paul Myron	<i>Colorado Springs.</i>	731 N. Weber St.
Harlan, Lois Logan	<i>Colorado Springs.</i>	905 Cheyenne Road.
Harris, Marea Vaughan	<i>New Castle, Colo.</i>	1624 N. Tejon St.
Hays, Elinor	<i>Colorado Springs.</i>	731 N. Cascade Ave.
Helm, Alfred Benjamin (B)	<i>Ft. Collins, Colo.</i>	608 N. Nevada Ave.
Hereford, Dorothy Louise	<i>Colorado Springs.</i>	1030 Colorado Ave.
Holloway, Florence	<i>Colorado Springs.</i>	24 E. Dale St.
Holm, Peter Cornelius (B)	<i>Falcon, Colo.</i>	1106 N. Weber St.
Holman, Harry Arthur (B)	<i>Colorado Springs.</i>	425 E. St. Vrain St.
Hopkins, Horace Herbert (E)	<i>Grand Junction.</i>	1106 N. Weber St.
Howard, Elmer Elbert (B)	<i>Colorado Springs.</i>	Hagerman Hall.
Howard, George Edward	<i>Pasadena, Calif.</i>	Manitou, Colo.
Huffman, Charles Albert	<i>Belle Plaine, Kan.</i>	Y. M. C. A.
Hunter, Reuben Clarence	<i>Colorado Springs.</i>	18 W. Moreno Ave.
Huston, Harold	<i>Manzanola, Colo.</i>	114 N. Weber St.
Jewell, Samuel Lewis, Jr.	<i>Jackson, Tenn.</i>	Alta Vista Hotel.
John, Edward Leslie	<i>Florence, Colo.</i>	211 E. Uintah St.
Johnson, Ernest Amos (B)	<i>Ouray, Colo.</i>	1319 N. Nevada Ave.
Johnson, Harriet Huston	<i>Denver, Colo.</i>	McGregor Hall.
Kennon, Anne Byrd	<i>Denver, Colo.</i>	McGregor Hall.
King, Arthur Dale (B)	<i>Greeley, Colo.</i>	1117 N. Nevada Ave.
Kinsman, Mary Esther	<i>Colorado City, Colo.</i>	122 Manitou Road.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Kipp, Corinne Ida	<i>Salt Lake City, Utah</i>	McGregor Hall.
Kittleman, Mary Elizabeth	<i>Colorado Springs.</i>	1419 N. Tejon St.
Koch, Dorothy L.	<i>Aspen, Colo.</i>	McGregor Hall.
Kurth, Alvin Norval (B)	<i>Colorado Springs.</i>	1216 N. Wahsatch Ave.
Landrum, Agnes Virginia	<i>Sterling, Colo.</i>	McGregor Hall.
Lawrence, Grace	<i>Colorado Springs.</i>	1709 Colorado Ave.
Leisy, Agnes (B)	<i>Montrose, Colo.</i>	Bemis Hall.
Lewis, Waldo McKinney (B)	<i>Delta, Colo.</i>	1140 Wood Ave.
Liljestrom, George William (B)	<i>Colorado Springs.</i>	1117 N. Nevada Ave.
Loomis, Dorothy Crofts	<i>Denver, Colo.</i>	McGregor Hall.
Magee, Annie Gretchen	<i>Alamosa, Colo.</i>	Ticknor Hall.
McClellan, Ruth	<i>Rocky Ford, Colo.</i>	McGregor Hall.
McIntosh, Margaret Effie	<i>Colorado Springs.</i>	840 E. Platte Ave.
McKenney, Sannie Pendleton	<i>Denver, Colo.</i>	McGregor Hall.
McKnight, Martin Luther (E)	<i>Colorado City, Colo.</i>	112 Lincoln Ave.
McWhorter, Lucile	<i>Denver, Colo.</i>	McGregor Hall.
Marshall, John Stanley	<i>Greeley, Colo.</i>	Hagerman Hall.
Mendenhall, Marion Naomi	<i>Montrose, Colo.</i>	McGregor Hall.
Mimmack, William Edward	<i>Eaton, Colo.</i>	1117 N. Nevada Ave.
Murray, Geraldine	<i>Cheyenne, Wyo.</i>	McGregor Hall.
Neuswanger, Chris Harold	<i>Greeley, Colo.</i>	1210 Wood Ave.
Offutt, Samuel Russell (E)	<i>Colorado Springs.</i>	1427 N. Nevada Ave.
Palmer, Walter Lincoln	<i>Castle Rock, Colo.</i>	1106 N. Weber St.
Park, Harold Alexander (E)	<i>Longmont, Colo.</i>	Hagerman Hall.
Paul, Jeanie Allyn	<i>Durango, Colo.</i>	Bemis Hall.
Peterson, Harold Lester (B)	<i>Colorado Springs.</i>	828 S. Cascade Ave.
Pollock, Milton Wayne (E)	<i>Foosland, Ills.</i>	Manitou, Colo.
Pond, Harold Mears	<i>Colorado Springs.</i>	1207 Washington Ave.
Powell, Arthur Lester (E)	<i>Colorado Springs.</i>	230 N. Weber St.
Reid, Lucy Gibbs	<i>Colorado Springs.</i>	505 N. Weber St.
Robinson, George Sidney	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Root, Viva Margaret	<i>Colorado Springs.</i>	1804 N. Prospect St.
Rudolph, Julia Wilson	<i>Denver, Colo.</i>	McGregor Hall.
Schenk, Frances Wilhelmina	<i>Colorado Springs.</i>	Camp Harding.
Schlessman, Gerald Lee (B)	<i>Colorado Springs.</i>	1402 S. Nevada Ave.
Schweiger, Carl Albert (B)	<i>Lafayette, Colo.</i>	1106 N. Weber St.
Shelden, Frank Clifton	<i>Colorado Springs.</i>	326 E. Bijou St.
Sheppard, Percival Eugene	<i>Eaton, Colo.</i>	Hagerman Hall.
Sinden, Roger Hull	<i>Canon City, Colo.</i>	Hagerman Hall.
Smith, Albert Herman	<i>Longmont, Colo.</i>	1117 N. Nevada Ave.
Smythe, Donald DeCou (E)	<i>Colorado Springs.</i>	827 N. Corona St.
Stubenrauch, Marie Louise	<i>Colorado Springs.</i>	701 E. Columbia St.
Stukey, Lorna	<i>Steamboat Springs.</i>	Ticknor Hall.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Tanner, James Frederick	<i>Denver, Colo.</i>	1122 N. Cascade Ave.
Taylor, Charles Chauncey (E)	<i>Colorado Springs.</i>	1526 Hayes St.
Taylor, Jean Katherine	<i>La Grange, Ills.</i>	107 S. Nevada Ave.
Thomas, Thornton Henry, Jr.	<i>Ordway, Colo.</i>	1117 N. Nevada Ave.
Tohill, Lawrence Springer	<i>Monte Vista, Colo.</i>	1122 N. Cascade Ave.
Tucker, Hayse Robert (B)	<i>Colorado Springs.</i>	215 S. Twelfth St.
Vorrath, Edna Hermina	<i>Colorado Springs.</i>	219 E. Fontanero St.
Wilkin, Juliet	<i>Canon City, Colo.</i>	Ticknor Hall.

SOPHOMORES.

Acker, Florence May	<i>Manitou, Colo.</i>	Manitou, Colo.
Allen, Harold Franklin	<i>Grand Junction.</i>	Hagerman Hall.
Anderson, Eugene Linnae (E)	<i>Colorado Springs.</i>	1129 Washington Ave.
Anderson, Marguerite Anna	<i>Aspen, Colo.</i>	Ticknor Hall.
Armstrong, Annie Eliza	<i>Ft. Collins, Colo.</i>	Bemis Hall.
Arnold, Landis J.	<i>Colorado Springs.</i>	423 N. Wahsatch Ave.
Azpell, Dorothy Phillips	<i>Denver, Colo.</i>	Bemis Hall.
Babcock, David Hart	<i>Gallatin, Mo.</i>	Alta Vista Hotel.
Bartlett, Landell	<i>Colorado Springs.</i>	1103 Wood Ave.
Bell, Gladys Colette	<i>Greeley, Colo.</i>	Bemis Hall.
Bellamy, Mary Marguerite	<i>Knoxville, Iowa.</i>	Bemis Hall.
Bendure, Hazel Valentine	<i>Durango, Colo.</i>	Montgomery Hall.
Berry, Robert Garvin	<i>Tulsa, Okla.</i>	817 N. Cascade Ave.
Bickmore, Thankful	<i>Denver, Colo.</i>	McGregor Hall.
Blaurock, Otilie Friederike	<i>Denver, Colo.</i>	Montgomery Hall.
Bowers, Zerua Rosalie	<i>Crowley, Colo.</i>	McGregor Hall.
Bush, Marguerite Orril	<i>Boise, Idaho.</i>	McGregor Hall.
Caldwell, Jesse Carter (E)	<i>Longmont, Colo.</i>	1106 N. Weber St.
Callis, Eleanor Western	<i>Denver, Colo.</i>	McGregor Hall.
Campbell, Faith Berbecker	<i>Denver, Colo.</i>	Montgomery Hall.
Carley, Meda Fayth	<i>Cheyenne, Wyo.</i>	McGregor Hall.
Castle, George Royce (E)	<i>Delta, Colo.</i>	1303 N. Tejon St.
Cheese, Clarence Harden	<i>Peyton, Colo.</i>	Hagerman Hall.
Cheese, Naomi Celia	<i>Peyton, Colo.</i>	1002 Colorado Ave.
Clark, William Keith	<i>Denver, Colo.</i>	1117 N. Nevada Ave.
Clemans, Maria Jeannette	<i>Colorado Springs.</i>	17 E. Dale St.
Cooper, Floyd Edward (E)	<i>Silverton, Colo.</i>	817 N. Tejon St.
Cooper, Lysle Winston	<i>Colorado Springs.</i>	705 S. Nevada Ave.
Copeland, William Duncan	<i>Denver, Colo.</i>	911 N. Nevada Ave.
Cover, Lee Hulbert	<i>Rocky Ford, Colo.</i>	1122 N. Cascade Ave.
Crockett, Charles Thompson (B)	<i>Pueblo, Colo.</i>	1319 N. Nevada Ave.
Crockett, Elizabeth Irving	<i>Pueblo, Colo.</i>	Bemis Hall.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Davis, Chester Earl (B)	<i>Loveland, Colo.</i>	1122 N. Cascade Ave.
Davis, Donald Watson (E)	<i>Colorado Springs.</i>	21 E. Caramillo St.
Davis, Marjorie Lucretia Anna	<i>Colorado Springs.</i>	21 E. Caramillo St.
Davis, Mildred Martha	<i>Pueblo, Colo.</i>	Montgomery Hall.
Day, Willard Tenney (F)	<i>El Paso, Texas.</i>	Y. M. C. A.
Dillon, Adelaide	<i>Castle Rock, Colo.</i>	McGregor Hall.
Ditmar, Carl Conrad	<i>Colorado Springs.</i>	1029 N. Nevada Ave.
Doane, George Herbert (B)	<i>Cheyenne, Wyo.</i>	1122 N. Cascade Ave.
Dunnell, William Wanton, Jr. (E)	<i>Providence, R. I.</i>	1215 N. Nevada Ave.
Duvall, Edwin Mather	<i>Colorado Springs.</i>	223 E. Yampa St.
Eakin, Helene Smith	<i>Tulsa, Okla.</i>	Bemis Hall.
Ellis, Mabel Blanche	<i>Denver, Colo.</i>	Montgomery Hall.
Ethell, Emily Gertrude	<i>Glenwood Springs.</i>	McGregor Hall.
Farmer, Grace Elinor	<i>Canon City, Colo.</i>	Ticknor Hall.
Farnsworth, Alice Winslow	<i>Colorado Springs.</i>	531 N. Cascade Ave.
Ferril, Thomas Hornsby	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Fertig, Margaret	<i>Colorado Springs.</i>	1508 N. Weber St.
Flegal, Walter Jennings	<i>Clearfield, Pa.</i>	1319 N. Nevada Ave.
Flynn, Edmund Clarence (E)	<i>Colorado Springs.</i>	518 N. Cascade Ave.
Frisbey, Helen	<i>Trinidad, Colo.</i>	1228 N. Weber St.
Fukushima, Iwao (E)	<i>Cheyenne, Wyo.</i>	7 Pelham Place.
Gambrill, Cyrus (E)	<i>Colorado Springs.</i>	126 E. Platte Ave.
Garvey, Edgar William	<i>Colorado Springs.</i>	Hagerman Hall.
Gildersleeve, Rosemary	<i>Denver, Colo.</i>	Montgomery Hall.
Gleason, Ruth	<i>Austin, Minn.</i>	Bemis Hall.
Grafton, Gladys	<i>Colorado Springs.</i>	1207 N. Custer Ave.
Green, Annie Cliffe	<i>Council Bluffs, Ia.</i>	Bemis Hall.
Gregg, Leah Jones	<i>Colorado Springs.</i>	1223 N. Tejon St.
Hadley, Beulah Vine	<i>Montrose, Colo.</i>	McGregor Hall.
Hammond, Leapha Mildred	<i>Des Moines, Ia.</i>	Bemis Hall.
Hart, Chester Eugene	<i>Colorado Springs.</i>	308 E. Monument St.
Hartenstein, Helen Louise	<i>Buena Vista, Colo.</i>	Bemis Hall.
Hepplewhite James Gladstone	<i>Canon City, Colo.</i>	Hagerman Hall.
Hetherington, Duncan Charteris	<i>Colorado Springs.</i>	218 E. Columbia St.
Higbee, Daniel Riggs	<i>Fowler, Colo.</i>	1106 N. Weber St.
Higgins, Nellie	<i>Pueblo, Colo.</i>	McGregor Hall.
Hoag, Dorothy Moore	<i>Pueblo, Colo.</i>	Bemis Hall.
Holloway, Edith Marie	<i>Dallas, Texas.</i>	Bemis Hall.
Hoover, Clara Helen	<i>Denver, Colo.</i>	Bemis Hall.
Hung-Woo, Mary Janet	<i>Denver, Colo.</i>	Bemis Hall.
Hughes, Edward William	<i>Elizabeth, Colo.</i>	1106 N. Weber St.
Hughes, Walter Richard	<i>Elizabeth, Colo.</i>	1106 N. Weber St.
Ingham, Arthur Woodward (E)	<i>Aspen, Colo.</i>	911 N. Nevada Ave.
Jeanne, Nellie May	<i>Colorado Springs.</i>	301 Cheyenne Blvd.
Johnson, Alan Hawley (E)	<i>Denver, Colo.</i>	Hagerman Hall.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Kingman, Helen Mary	<i>Colorado Springs.</i>	514 N. Cascade Ave.
Kinnikin, Mathias Bond (E)	<i>Worden, Ills.</i>	1220 N. Custer Ave.
Kistler, Mary Lou	<i>Colorado Springs.</i>	1230 Washington Ave.
Kline, Arthur Greamba (E)	<i>Salt Lake City, Utah</i>	931 N. Weber St.
Kuver, Helen Anna	<i>Trinidad, Colo.</i>	Bemis Hall.
Kyffin, Frank Idwell (B)	<i>Denver, Colo.</i>	1106 N. Weber St.
Larsen, Lloyd Carlton (B)	<i>La Junta, Colo.</i>	1319 N. Nevada Ave.
Leshner, David Barnes (B)	<i>Golden, Colo.</i>	817 N. Tejon St.
Lodwick, Paul Newton (B)	<i>Greeley, Colo.</i>	1117 N. Nevada Ave.
Logan, Howard Byron (E)	<i>Colorado Springs.</i>	316 N. Institute St.
Loud, William Brewster	<i>Colorado Springs.</i>	1203 N. Tejon St.
McBride, Robert Steele	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
McClain, James William, Jr.	<i>Manzanola, Colo.</i>	911 N. Nevada Ave.
McClelland, Sybil	<i>Colorado Springs.</i>	Montgomery Hall.
McCoy, Orlando Zeben	<i>Colorado Springs.</i>	521 S. Tejon St.
McDonald, William Arthur	<i>Colorado Springs.</i>	805 S. Cascade Ave.
McDougall, John Allen	<i>Longmont, Colo.</i>	Hagerman Hall.
McGlashan, Jessie Partch	<i>Grand Junction.</i>	McGregor Hall.
McKibben, Helen	<i>Kinsley, Kans.</i>	Ticknor Hall.
McKinney, Marguerite Alice	<i>Colorado Springs.</i>	423 N. Franklin St.
McKlveen, Marguerite	<i>Denver, Colo.</i>	McGregor Hall.
McLaughlin, Romain Edward	<i>Florissant, Colo.</i>	Hagerman Hall.
McLean, Katharine	<i>Denver, Colo.</i>	Bemis Hall.
McMillan, Neil Taylor	<i>Denver, Colo.</i>	1122 N. Cascade Ave.
McNutt, DeWitt Dean	<i>Denver, Colo.</i>	911 N. Nevada Ave.
Mace, Olin Eugene (E)	<i>Grand Junction.</i>	Y. M. C. A.
Manning, Ethel Mary	<i>Colorado Springs.</i>	Montgomery Hall.
Mathis, Irene Edna	<i>Colorado Springs.</i>	814 E. Monument St.
Mayfield, Gladys	<i>Granada, Colo.</i>	McGregor Hall.
Maxwell, William Floyd	<i>Colorado Springs.</i>	1517 N. Weber St.
Metcalf, Marjorie	<i>Denver, Colo.</i>	Bemis Hall.
Meyer, Felicia Theresa	<i>Colorado Springs.</i>	1606 Cheyenne Road.
Morris, Robert Watts	<i>Colorado Springs.</i>	2119 N. Nevada Ave.
Morrow, Florence Marie	<i>Colorado Springs.</i>	Broadmoor.
Mosgrove, Helen Elizabeth	<i>Salida, Colo.</i>	McGregor Hall.
Nelson, Agnes Ure Gillespie	<i>Denver, Colo.</i>	McGregor Hall.
Nicholson, Elizabeth	<i>Colorado Springs.</i>	110 S. Wahsatch Ave.
Nichols, Madge Irene	<i>Colorado Springs.</i>	Broadmoor.
Nierman, Alberta Emma	<i>Manitou, Colo.</i>	144 Deerpath Ave.
Nimmo, Mary Ellen	<i>Cheyenne, Wyo.</i>	McGregor Hall.
Norris, Valeda Gertrude	<i>La Salle, Colo.</i>	Bemis Hall.
Oberndorfer, Beulah	<i>Colorado Springs.</i>	916 N. Weber St.
O'Hara, Michael James	<i>Denver, Colo.</i>	1122 N. Cascade Ave.
Oldfield, Mary Misilda	<i>Colorado Springs.</i>	415 S. Nevada Ave.
Osborne, Melvin Homer (E)	<i>Denver, Colo.</i>	418 E. Cucharas St.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Palmer, Blanche Marguerite	<i>Sterling, Colo.</i>	McGregor Hall.
Pattison, Lucile	<i>Colorado Springs.</i>	1714 N. Tejon St.
Paul, Sophie Allen	<i>Durango, Colo.</i>	Bemis Hall.
Perkins, Flora Dunreath	<i>Salida, Colo.</i>	McGregor Hall.
Perkins, Mac Dudley	<i>Denver, Colo.</i>	Hagerman Hall.
Pickard, Edith Alta	<i>Longmont, Colo.</i>	Bemis Hall.
Pirie, Alice May	<i>Ft. Collins, Colo.</i>	Montgomery Hall.
Pound, Vera Helen	<i>Chama, N. Mex.</i>	Montgomery Hall.
Prior, Frank Hart	<i>Colorado Springs.</i>	720 N. Tejon St.
Putnam, Arthur Lorraine (E)	<i>Cheyenne, Wyo.</i>	1117 N. Nevada Ave.
Ragle, Amy Evangeline	<i>Pueblo, Colo.</i>	Bemis Hall.
Randall, Mary	<i>Colorado Springs.</i>	1812 N. Nevada Ave.
Reid, Margaret	<i>Colorado Springs.</i>	505 N. Weber St.
Richmond, William Edwin (E)	<i>Colorado Springs.</i>	1628 Washington Ave.
Rockwell, Helen Lenore	<i>Salt Lake City, Utah</i>	McGregor Hall.
Ryder, Warren Bratton	<i>Colorado Springs.</i>	540 W. Monument St.
Ryder, Wendell Martin	<i>Colorado Springs.</i>	540 W. Monument St.
Sabin, Gerald Avery	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Sachs, Dorothy Claude	<i>Denver, Colo.</i>	Montgomery Hall.
Schaffer, Scott Philip	<i>Dutchison, Kans.</i>	120 Tyler Place.
Schiesswohl, Chris Jacob	<i>Grand Junction.</i>	Y. M. C. A.
Schmitt, Celestine Fredericka	<i>Colorado Springs.</i>	1336 N. Weber St.
Scott, Hortense Lucille	<i>Colorado Springs.</i>	1402 N. Weber St.
Seitzinger, Edith Viola	<i>Colorado Springs.</i>	301 Mesa Road.
Shaffer, William Luman (E)	<i>Greeley, Colo.</i>	1117 N. Nevada Ave.
Sheppard, Paul Richard	<i>Eaton, Colo.</i>	Hagerman Hall.
Simmons, Paul Clarence (E)	<i>Belen, N. Mex.</i>	Hagerman Hall.
Sims, Irene Neill	<i>Monte Vista, Colo.</i>	Bemis Hall.
Skinner, Marian Louise	<i>Colorado Springs.</i>	20 Boulder Crescent.
Smith, Alice Evelyn	<i>Denver, Colo.</i>	McGregor Hall.
Spangler, Raymond Leslie	<i>Longmont, Colo.</i>	1106 N. Weber St.
Spingler, Christine Albertina	<i>Colorado Springs.</i>	1120 N. Tejon St.
Staley, Hazel	<i>Colorado Springs.</i>	2024 N. Nevada Ave.
Strain, Frank Elven (B)	<i>Lamar, Colo.</i>	1122 N. Cascade Ave.
Stukey, David Chapman (E)	<i>Steamboat Springs.</i>	225 N. Weber St.
Swart, Ellen Orinda	<i>Duluth, Minn.</i>	Montgomery Hall.
Swart, Richard Houghton	<i>Duluth, Minn.</i>	Hagerman Hall.
Sweet, Dorothy Mary	<i>Denver, Colo.</i>	Montgomery Hall.
Taylor, Reuben Davis (E)	<i>Texarkana, Texas.</i>	Y. M. C. A.
Thoron, Louise	<i>Colorado Springs.</i>	1435 N. Cascade Ave.
Thompson, Ralph Fleming	<i>Canon City, Colo.</i>	36 Boulder Crescent.
Thompson, Thomas Scarborough	<i>Colorado Springs.</i>	1122 N. Cascade Ave.
Torbit, Pauline Mary	<i>Fountain, Colo.</i>	Bemis Hall.
Tucker, Harriet Ann Howard	<i>Colorado Springs.</i>	817 N. Weber St.
Verner, Ogden E. (B)	<i>Denver, Colo.</i>	1106 N. Weber St.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Wagner, Nina Marie	<i>Springfield, S. Dak.</i>	Ticknor Hall.
Walker, Frances Lucille	<i>Canon City, Colo.</i>	McGregor Hall.
Wallace, Gladys Anne	<i>Denver, Colo.</i>	McGregor Hall.
Walter, Thelma Minnie	<i>Silverton, Colo.</i>	Montgomery Hall.
Warnock, Janet	<i>Loveland, Colo.</i>	Bemis Hall.
Warren, Edward De Witt	<i>Fruita, Colo.</i>	510 N. Nevada Ave.
Weber, Glenn L. (E)	<i>Colorado Springs.</i>	234 Franklin St.
Wendell, Forrest Ellsworth	<i>Buttes, Colo.</i>	629 N. Weber St.
Weston, Sylvia Gwendolyn	<i>Colorado Springs.</i>	1112 E. Pikes Peak Ave.
White, Helen Phillips	<i>Colorado Springs.</i>	21 Cheyenne Blvd.
White, Laura Almira	<i>Denver, Colo.</i>	Montgomery Hall.
Whyte, Lucile Janet	<i>Denver, Colo.</i>	Ticknor Hall.
Wilcox, Mary Helen	<i>Hotchkiss, Colo.</i>	931 N. Wahsatch Ave.
Williams, Carroll Mortimer (E)	<i>Longmont, Colo.</i>	Hagerman Hall.
Williams, Elsa Leigh	<i>Colby, Kans.</i>	McGregor Hall.
Wills, Benjamin Green	<i>Colorado City, Colo.</i>	2018 Armstrong Ave.
Winter, Sidney Graham	<i>Ogden, Utah.</i>	1415 N. Nevada Ave.
Wubben, Eugene Paul	<i>Colorado Springs.</i>	Broadmoor.
Zirkle, Ruth	<i>Denver, Colo.</i>	McGregor Hall.

FRESHMEN.

Adriance, Annabel Ardeth	<i>Gobleville, Mich.</i>	206 S. Wahsatch Ave.
Ainsworth, Albert Gaylord	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Anderson, Edith Elizabeth	<i>Colorado Springs.</i>	624 E. St. Vrain St.
Anderson, Norval Eugene (E)	<i>Colorado Springs.</i>	535 E. Platte Ave.
Annand, Percy Nicol	<i>Hotchkiss, Colo.</i>	529 N. Weber St.
Arkwright, Evelyn Swinhoe	<i>Colorado Springs.</i>	1801 Culebra Ave.
Arms, John Pickering (B)	<i>Grand Junction.</i>	1106 N. Cascade Ave.
Aylard, Harriette	<i>Alamosa, Colo.</i>	222 E. Uintah St.
Babcock, Lawrence Vernon (E)	<i>Cheyenne, Wyo.</i>	923 N. Weber St.
Bancroft, Helen Louise	<i>Colorado Springs.</i>	212 N. Wahsatch Ave.
Barnett, Corinne McKenzie	<i>Denver, Colo.</i>	McGregor Hall.
Barney, Armin Bradley	<i>Colorado Springs.</i>	1828 N. Nevada Ave.
Bedford, Charles Oscar	<i>Colorado Springs.</i>	1720 Wood Ave.
Bellrose, Kenneth William (B)	<i>Eaton, Colo.</i>	1122 N. Cascade Ave.
Biebush, Frederick Calvin (F)	<i>Greeley, Colo.</i>	410 N. Nevada Ave.
Bischof, Grace Louise Elizabeth	<i>Colorado Springs.</i>	605 N. Cascade Ave.
Blair, Archie David Todd (E)	<i>Edinburgh, Scotland</i>	1414 N. Nevada Ave.
Blair, Ruford Watt	<i>Buttes, Colo.</i>	911 N. Nevada Ave.
Blake Ruth Elizabeth	<i>Denver, Colo.</i>	Bemis Hall.
Bleistein, Floyd Albert (E)	<i>Denver, Colo.</i>	214 E. Dale St.
Bloom, Roy Levi (B)	<i>Longmont, Colo.</i>	722 N. Weber St.
Borst, Edward George (E)	<i>Colorado City, Colo.</i>	926 Colorado Ave.
Bower, Kathryn	<i>Guthrie Center, Ia.</i>	2012 N. Tejon St.
Briggs, Paul Lyman	<i>Denver, Colo.</i>	911 N. Nevada Ave.
Bromfield, Alfred John, Jr. (F)	<i>Denver, Colo.</i>	1129 N. Nevada Ave.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Brooks, Catherine	<i>Colorado Springs.</i>	1324 N. Nevada Ave.
Brown, Laverne Jessie	<i>Colorado Springs.</i>	408 E. San Rafael St.
Brown, Ruth Thompson	<i>Silverton, Colo.</i>	Bemis Hall.
Brumfield, Roy Jennings	<i>Silverton, Colo.</i>	1319 N. Nevada Ave.
Bryan, Richard Pearson (E)	<i>Golden, Colo.</i>	Plaza Hotel.
Buchanan, Van Kirk	<i>Colorado Springs.</i>	1404 N. Cascade Ave.
Burch, Norene Melvina	<i>Colorado Springs.</i>	110 N. Pine St.
Burgess, Marion Tucker	<i>Denver, Colo.</i>	126 N. Cascade Ave.
Campbell, Catherine Dorothy	<i>Denver, Colo.</i>	Montgomery Hall.
Campbell, Kenneth Thomas	<i>Denver, Colo.</i>	1117 N. Nevada Ave.
Carlson, Jessie Alvina	<i>Julesburg, Colo.</i>	Bemis Hall.
Carrick, Ramona	<i>Colorado Springs.</i>	1430 N. Weber St.
Carter, John Allen, Jr.	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Case, Ashbel Wesley (F)	<i>Colorado Springs.</i>	1223 N. Nevada Ave.
Catren, Mary Lucile	<i>Denver, Colo.</i>	Bemis Hall.
Chase, Harold Albert	<i>Colorado Springs.</i>	231 E. Jefferson St.
Chiles, Marcellus Holmes	<i>Denver, Colo.</i>	1122 N. Cascade Ave.
Cleveland, Eloise Allen	<i>Memphis, Tenn.</i>	Ticknor Hall.
Coffin, Philip Tristram (E)	<i>Colorado Springs.</i>	620 E. Columbia St.
Collins, Raymond Joy (B)	<i>Ft. Morgan, Colo.</i>	Plaza Hotel.
Connell, Madeline	<i>Colorado Springs.</i>	2 E. Columbia St.
Coons, Erma Leone	<i>Colorado Springs.</i>	326 E. St. Vrain St.
Copeland, Jay Milton, Jr.	<i>Denver, Colo.</i>	911 N. Nevada Ave.
Coulter, Joseph Ross	<i>Greeley, Colo.</i>	1106 N. Weber St.
Crabb, David Wendell (B)	<i>Greeley, Colo.</i>	801 N. Nevada Ave.
Crabtree, Lottie Lucina	<i>Colorado City, Colo.</i>	1835 Colorado Ave.
Craig, Edna Rosell	<i>Colorado Springs.</i>	1714 Colorado Ave.
Crawford, Sarah Lucile	<i>Manitou, Colo.</i>	156 Deerpath Ave.
Crick, Bernice Geneva	<i>Pueblo, Colo.</i>	Bemis Hall.
Criswell, Robert Wesley	<i>Paonia, Colo.</i>	209 Cheyenne Road.
Croasdale, Ernest Shaw (E)	<i>Denver, Colo.</i>	1122 N. Cascade Ave.
Cunningham, Myrtle Mildred	<i>Colorado Springs.</i>	415 E. San Rafael St.
Curtis, Hazel Elitha	<i>Saguache, Colo.</i>	Bemis Hall.
Daniels, Mary	<i>Florence, Colo.</i>	Montgomery Hall.
Dean, Eva Ordella	<i>Denver, Colo.</i>	Montgomery Hall.
De Flon, William Dewey	<i>Colorado Springs.</i>	17 N. Weber St.
Dickey, Ozro De Sota (F)	<i>Clarksburg, W. Va.</i>	6 Boulder Crescent.
Dickinson, Robert Flynn	<i>Colorado Springs.</i>	1108 Colorado Ave.
Donald, Mildred MacLaren	<i>New Harmony, Ind.</i>	523 Washington Ave.
Ellis, Amanda Mae	<i>La Junta, Colo.</i>	Ticknor Hall.
Emery, Francis Little	<i>Wheat Ridge, Colo.</i>	Hagerman Hall.
Engle, Frank Nelson (E)	<i>Colorado Springs.</i>	21 N. Nevada Ave.
Eppich, Margaret Sophia	<i>Denver, Colo.</i>	Montgomery Hall.
Field, Mary Louise	<i>Colorado Springs.</i>	422 E. Willamette Ave.
Finch, Alick Brock	<i>Colorado Springs.</i>	430 E. Platte Ave.
Fischer, Henry Hubert (E)	<i>Colorado Springs.</i>	323 S. Cascade Ave.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Franklin, Alice Virginia	<i>Colorado Springs.</i>	1130 N. Cascade Ave.
Frantz, Philip Scott (B)	<i>Colorado Springs.</i>	324 N. Custer Ave.
Frewen, Elizabeth Martha	<i>Denver, Colo.</i>	Bemis Hall.
Freyschlag, Carman Pitcher	<i>Colorado Springs.</i>	30 E. Dale St.
Fulkerson, Gladys Bliss	<i>Colorado Springs.</i>	118 W. Rio Grande St.
Gabbert, John Martin Slaymaker	<i>Caldwell, Kans.</i>	911 N. Nevada Ave.
Garr, Turner Mathias (B)	<i>Monte Vista, Colo.</i>	504 N. Nevada Ave.
Garstin, Harriette Winslow	<i>Colorado Springs.</i>	117 E. Espanola St.
Gibbs, Lowell Bliss	<i>Monte Vista, Colo.</i>	
Gildea, Edwin Francis	<i>Colorado Springs.</i>	2220 N. Cascade Ave.
Gilmore, Alice	<i>Colorado Springs.</i>	1219 Colorado Ave.
Gimlett, Dorothy Evangeline	<i>Salida, Colo.</i>	McGregor Hall.
Givens, Martha	<i>Colorado Springs.</i>	527 N. Tejon St.
Glassford, Mary Catherine	<i>Grand Junction.</i>	McGregor Hall.
Glover, William Hans (B)	<i>Giltner, Neb.</i>	Hagerman Hall.
Goddard, Helen Belinda	<i>Fountain, Colo.</i>	519 E. Cache la Poudre.
Goddard, Persis	<i>Fountain, Colo.</i>	215 E. Monument St.
Goldsmith, Leon Max (B)	<i>Colorado Springs.</i>	304 W. Huerfano St.
Golightly, Harvey James (B)	<i>Golden, Colo.</i>	1006 N. Weber St.
Gorman, Norton Vincent	<i>Golden, Colo.</i>	412 N. Tejon St.
Graham, John Woodrow	<i>Denver, Colo.</i>	Hagerman Hall.
Graham, Marie Leone	<i>Colorado Springs.</i>	Broadmoor.
Gregory, Charles Arthur	<i>Manzanola, Colo.</i>	529 N. Weber St.
Groth, Harvey Charles (E)	<i>Colorado Springs.</i>	1811 N. Corona St.
Grout, Dorothy Ellen	<i>Pueblo, Colo.</i>	Montgomery Hall.
Guth, Leslie John (E)	<i>Golden, Colo.</i>	1130 N. Nevada Ave.
Gutmann, Arthur Adolf	<i>Colorado Springs.</i>	222 N. Weber St.
Hall, Harold Read	<i>Pratt, Kans.</i>	607 N. Wahsatch Ave.
Hall, Harriet	<i>Socorro, N. Mex.</i>	McGregor Hall.
Hall, Ida	<i>Socorro, N. Mex.</i>	McGregor Hall.
Hall, Mary Helen	<i>Ottumwa, Iowa.</i>	Bemis Hall.
Hall, Mary Roana	<i>Denver, Colo.</i>	Ticknor Hall.
Halpin, Eleanor Dixon	<i>Mack, Colo.</i>	Ticknor Hall.
Hamilton, Josephine Margaret	<i>Colorado Springs.</i>	315 E. Willamette Ave.
Hanes, Creta Helen	<i>Longmont, Colo.</i>	Ticknor Hall.
Hampton, Harry Nathan	<i>Hover, Wash.</i>	632 N. Nevada Ave.
Hanon, Veda Marie	<i>McHenry, N. Dak.</i>	403 N. Wahsatch Ave.
Harper, Helene	<i>Denver, Colo.</i>	Bemis Hall.
Harrington, Rose Elizabeth	<i>Colorado Springs.</i>	209 Cheyenne Ave.
Harrison, Agnes Lavinia	<i>Colorado Springs.</i>	1416 S. Nevada Ave.
Hartley, John Wiley (E)	<i>Denver, Colo.</i>	824 N. Tejon St.
Hawks, Harold	<i>Colorado Springs.</i>	2311 N. Tejon St.
Hayden, James Gay (B)	<i>Colorado Springs.</i>	1434 Wood Ave.
Hayden, Mary Kathryn	<i>Colorado Springs.</i>	1434 Wood Ave.
Hayerford, Pearl Anita Sophia	<i>Belen, N. Mex.</i>	Ticknor Hall.
Hendershot, Olga	<i>Colorado Springs.</i>	225 E. Uintah St.
Heuring, Francis	<i>Colorado Springs.</i>	136 N. Seventh St.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Hewitt, Elsie	<i>Platteville, Colo.</i>	Bemis Hall.
Hicks, Adeline	<i>Denver, Colo.</i>	Bemis Hall.
Higgins, Ellen Louise Belle	<i>Victor, Colo.</i>	Montgomery Hall.
Higgins, Hazel Mabel	<i>Victor, Colo.</i>	Montgomery Hall.
Hill, Marguerite Elizabeth	<i>Colorado Springs.</i>	616 E. Willamette Ave.
Hoag, Barton	<i>Colorado Springs.</i>	729 N. Weber St.
Hoffman, Sylvester Brandt	<i>Chicago, Ills.</i>	715 N. Nevada Ave.
Holbrook, Dorothy	<i>Colorado Springs.</i>	1629 N. Tejon St.
Holt, Thaddeus Goode	<i>Birmingham, Ala.</i>	817 N. Weber St.
Hooley, Andrew Joseph	<i>Cable, Ohio.</i>	125 N. Weber St.
Hounsley, Ruth Bell	<i>Castle Rock, Colo.</i>	Ticknor Hall.
Howes, Robert Arthur, Jr.	<i>Colorado Springs.</i>	1029 N. Nevada Ave.
Huffman, Frank Tytus, Jr.	<i>Dayton, Ohio.</i>	1327 N. Nevada Ave.
Hughes, Clarence William (B)	<i>Rapid City, S. Dak.</i>	418 N. Tejon St.
Hunt, Lois Rebecca	<i>Colorado Springs.</i>	530 N. Nevada Ave.
Husung, John Leo	<i>Colorado Springs.</i>	510 E. Yampa St.
Jackson, John Burrington	<i>Colorado Springs.</i>	9 S. Eighth St.
Jackson, Joseph Perry	<i>Colorado City, Colo.</i>	205 Lincoln Ave.
Jarvis, Russell Boyden (B)	<i>Montrose, Colo.</i>	1324 N. Nevada Ave.
Joffrion, Desdemona	<i>Lecompte, La.</i>	1202 Washington Ave.
Johnson, Leo Plympton (E)	<i>Cleveland, Ohio.</i>	1711 N. Weber St.
Johnson, Percy Franklin	<i>Colorado Springs.</i>	1105 Grant Ave.
Johnston, Ruth	<i>Hooper, Colo.</i>	Ticknor Hall.
Jones, Evva Elizabeth	<i>Pueblo, Colo.</i>	Ticknor Hall.
Jones, Rene (F)	<i>Fairmount, Ind.</i>	1122 N. Cascade Ave.
Keener, Annis May	<i>Colorado Springs.</i>	426 E. Cache la Poudre.
Keith, Dorothy Ware	<i>Denver, Colo.</i>	Ticknor Hall.
Kersten, Hilda Louise	<i>Colorado Springs.</i>	1114 N. Corona St.
Kidwell, Lela Leo	<i>Loveland, Colo.</i>	McGregor Hall.
Killebrew, Clair William	<i>Ft. Morgan, Colo.</i>	1224 N. Tejon St.
King, Mable Ann Eliza	<i>Colorado Springs.</i>	122 S. Tenth St.
Kinney, Edmond Lindsey	<i>Colorado Springs.</i>	1423 N. Tejon St.
Kirk, Frank May Louise	<i>Denver, Colo.</i>	Bemis Hall.
Kirk, Hazel Charles	<i>Eastonville, Colo.</i>	Bemis Hall.
Knies, Atwood Wagner	<i>Flagler, Colo.</i>	1205 N. Nevada Ave.
Knowles, Samuel Fleming	<i>Colorado Springs.</i>	843 E. Cache la Poudre.
Kranich, Fred Bilger	<i>Denver, Colo.</i>	1117 N. Nevada Ave.
Kretschmer, John George (E)	<i>Pueblo, Colo.</i>	819 N. Nevada Ave.
Kumler, Mary Elmira Eliza	<i>Denver, Colo.</i>	Montgomery Hall.
Lamb, Leroy Eugene (E)	<i>Montrose, Colo.</i>	1324 N. Nevada Ave.
Lamb, William Edward, Jr. (E)	<i>Denver, Colo.</i>	214 E. Dale St.
Landell, Catherine Sally	<i>Fort Lupton, Colo.</i>	McGregor Hall.
Lane, James Preston	<i>Macksville, Kans.</i>	1608 N. Corona St.
Larsen, George F. (F)	<i>Council Bluffs, Ia.</i>	Hagerman Hall.
Lee, Glenn Boyd (E)	<i>Rocky Ford, Colo.</i>	716 N. Tejon St.
Lewis, Leland McBee	<i>Rocky Ford, Colo.</i>	1122 N. Cascade Ave.
Liljestrom, Carl Roger	<i>Pueblo, Colo.</i>	1117 N. Nevada Ave.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Linger, Howard Key (E)	<i>Denver, Colo.</i>	214 E. Dale St.
Love, James Elton	<i>Fountain, Colo.</i>	1014 N. Weber St.
Lush, George Everett	<i>Colorado Springs.</i>	110 S. 10th St.
Lutin, Gerald Cheavis	<i>Sterling, Colo.</i>	Hagerman Hall.
Lynn, Emerson Ellwood	<i>Loveland, Colo.</i>	Plaza Hotel.
McClellan, Laura	<i>Elizabeth, Colo.</i>	McGregor Hall.
McKendry, Leon Davis	<i>Archer, Neb.</i>	Hagerman Hall.
McLain, Ruth Maurine	<i>Denver, Colo.</i>	224 E. Monument St.
McLemore, John Coffee, Jr. (B)	<i>Memphis, Tenn.</i>	1506 N. Tejon St.
Mack, Charles Everett	<i>Colorado Springs.</i>	918 N. Weber St.
Maddocks, Raymond Edward (B)	<i>Simla, Colo.</i>	221 E. St. Vrain St.
Magee, David Claybourne	<i>Colorado Springs.</i>	629 N. Corona St.
Mansfield, Holden Brant (E)	<i>Manitou, Colo.</i>	Manitou, Colo.
Mantor, Clifford (E)	<i>Longmont, Colo.</i>	109 S. Nevada Ave.
Marshall, Jean M.	<i>La Junta, Colo.</i>	Bemis Hall.
Marston, Marion Rowland	<i>Brunswick, Mo.</i>	1319 N. Nevada Ave.
Martin, Louis Everett	<i>Colorado Springs.</i>	2527 N. Nevada Ave.
Martin, William Crary	<i>Tripoli, Iowa.</i>	1224 N. Tejon St.
Matlock, Woodford Allen, Jr.	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Matty, Joseph H. Jr.	<i>Denver, Colo.</i>	Hagerman Hall.
Melber, Edna Florence	<i>Independence, Colo.</i>	1109 Wood Ave.
Middagh, Walker James	<i>Colorado Springs.</i>	Stratton Park.
Miller, Mary Janetta	<i>Greeley, Colo.</i>	McGregor Hall.
Montgomery, Evelyn Elizabeth	<i>Denver, Colo.</i>	Ticknor Hall.
Moore, Carl A.	<i>Colorado Springs.</i>	828 E. Willamette Ave.
Moore, John Pearce (B)	<i>Colorado Springs.</i>	828 E. Willamette Ave.
Morris, Virgil Irving	<i>Colorado City, Colo.</i>	302 N. Fourth St.
Morse, James Johnston (B)	<i>Longmont, Colo.</i>	Hagerman Hall.
Mullen, Howard Clifford	<i>Colorado Springs.</i>	1718 S. Cascade Ave.
Munro, George Allan (B)	<i>Crow Agency, Mont.</i>	Hagerman Hall.
Myers, Florence May	<i>Colorado Springs.</i>	330 E. Monument St.
Nassour, Fred	<i>Colorado Springs.</i>	317 E. Kiowa St.
Nate, Ruth Elizabeth	<i>Champaign, Ills.</i>	824 N. Tejon St.
Nelson, Bernice	<i>Ogallala, Neb.</i>	Ticknor Hall.
Newman, Harry Jackson	<i>Colorado Springs.</i>	1627 N. Nevada Ave.
Newton, George E.	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Nichols, Ruth Leona	<i>Colorado Springs.</i>	Broadmoor.
Nicholson, Priscilla	<i>Colorado Springs.</i>	110 S. Wahsatch Ave.
Novotny, Ernest (F)	<i>Pratt, Kans.</i>	607 N. Wahsatch Ave.
Nunn, Russell Joseph (B)	<i>Colorado Springs.</i>	130 N. Seventh St.
Orb, Frank Henry (E)	<i>Amarillo, Texas.</i>	316 E. Dale St.
Ormes, Eleanor Frances	<i>Colorado Springs.</i>	1623 N. Tejon St.
Orr, Owen Oliver (B)	<i>Colorado Springs.</i>	914 N. Corona St.
Paine, Helene Avis	<i>Colorado Springs.</i>	1129 N. Nevada Ave.
Palmer, Donald Ainslie	<i>Castle Rock, Colo.</i>	1106 N. Weber St.
Parker, Fanny Fern	<i>Colorado Springs.</i>	11 W. 2nd St., Ivywild.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Parker, Lucy E.	<i>Julesburg, Colo.</i>	Bemis Hall.
Parr, Perry Louis	<i>Colorado Springs.</i>	1119 N. Weber St.
Peck, James Arthur (E)	<i>Colorado Springs.</i>	917 N. Nevada Ave.
Peirce, Lovell Haskins	<i>Grand Junction.</i>	423 N. Weber St.
Perrine, Hazel Ruth	<i>Denver, Colo.</i>	McGregor Hall.
Perry, Harold Webster	<i>Colorado Springs.</i>	315 E. St. Vrain St.
Potts, Charles Haygood	<i>Jackson, Tenn.</i>	111 Tyler Place.
Prince, Harriet Kinnear	<i>Denver, Colo.</i>	Ticknor Hall.
Rhea, Blanche Alda	<i>Colorado Springs.</i>	11 S. Fifteenth St.
Rhea, Harold Bennett (F)	<i>Golden, Colo.</i>	Plaza Hotel.
Robbins, Dwight Lincoln	<i>Colorado Springs.</i>	326 N. Institute St.
Robinson, Gladys Frances	<i>Muskogee, Okla.</i>	Bemis Hall.
Robinson, Mabel Lee	<i>Muskogee, Okla.</i>	Bemis Hall.
Robinson, Rowland John (E)	<i>Colorado Springs.</i>	746 E. Platte Ave.
Saunders, Oscar Alan	<i>Brush, Colo.</i>	1224 N. Tejon St.
Schreiber, Russell Francis	<i>Colorado City, Colo.</i>	301 Monroe Ave.
Schwartz, Rosa	<i>Colorado Springs.</i>	112 N. Nevada Ave.
Scott, Helen Margaret	<i>Colorado Springs.</i>	1402 N. Weber St.
Scribner, Spencer Crane (B)	<i>Pueblo, Colo.</i>	1129 N. Nevada Ave.
Sears, Helen Aretha	<i>Trinidad, Colo.</i>	Bemis Hall.
Seeley, Frank Livingston	<i>La Junta, Colo.</i>	315 N. Weber St.
Seldomridge, Julia Etta	<i>Colorado Springs.</i>	1015 N. Nevada Ave.
Shaw, Helen Martha	<i>Las Animas, Colo.</i>	McGregor Hall.
Shaw, Oren Vern	<i>Colorado Springs.</i>	1209 N. Prospect St.
Sheehan, Helene Catharine	<i>Colorado Springs.</i>	712 N. Spruce St.
Sheldon, Willard Benjamin	<i>Colorado Springs.</i>	18 E. Dale St.
Simpson, Letty George	<i>Canon City, Colo.</i>	Ticknor Hall.
Skeen, Charlotte Severn	<i>Ogden, Utah.</i>	McGregor Hall.
Skinner, Dwight Lowther (E)	<i>Denver, Colo.</i>	911 N. Nevada Ave.
Smith, Floyd John	<i>Buttes, Colo.</i>	219 N. Wahsatch Ave.
Smith, Harold Willis	<i>Seibert, Colo.</i>	415 N. Wahsatch Ave.
Smith, Ruth Fillmore	<i>Denver, Colo.</i>	Bemis Hall.
Snelling, Edna Bernice	<i>Alamosa, Colo.</i>	Ticknor Hall.
Sopris, Albert Elbridge	<i>Denver, Colo.</i>	1122 N. Cascade Ave.
Spingler, Wilhelmina Mannle	<i>Colorado Springs.</i>	1120 N. Tejon St.
Spratt, Robert Elmer	<i>Denver, Colo.</i>	Plaza Hotel.
Squire, Ione Ruhama	<i>Aberdeen, S. Dak.</i>	Bemis Hall.
Stanton, James Elmo (E)	<i>Colorado Springs.</i>	223 N. Sixteenth St.
Steuerwald, Robert Charles (E)	<i>Longmont, Colo.</i>	722 N. Weber St.
Stowell, George Wilhelm	<i>Aurora, Neb.</i>	Y. M. C. A.
Strong, Donnon Ellis	<i>Carthage, Mo.</i>	219 E. St. Vrain St.
Stump, Nolley B.	<i>Deming, N. Mex.</i>	Plaza Hotel.
Sundquist, Lulu Mildred	<i>Alamosa, Colo.</i>	Bemis Hall.
Suomela, Niilo Vernon (B)	<i>Telluride, Colo.</i>	1224 N. Tejon St.
Sutton, James Edward	<i>Denver, Colo.</i>	911 N. Nevada Ave.
Sweet, Walden Eubanks	<i>Carbondale, Colo.</i>	18 E. Caramillo St.
Taggart, William Rockwell	<i>Edgewater, Colo.</i>	126 N. Cascade Ave.
Tate, Virginia	<i>Pueblo, Colo.</i>	McGregor Hall.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Taylor, Jennie Elizabeth	<i>Colorado Springs.</i>	1526 Hayes St.
Thomas, Myrtle Bertha	<i>Colorado Springs.</i>	117 N. Nevada Ave.
Trenner, Rachel Dorothea	<i>Pueblo, Colo.</i>	Ticknor Hall.
Trowbridge, James Orr	<i>Denver, Colo.</i>	911 N. Nevada Ave.
Tucker, Martha Christina	<i>Colorado Springs.</i>	1130 N. Nevada Ave.
Tucker, Wilmer Harland (E)	<i>Colorado Springs.</i>	317 E. Cache la Poudre.
Van Lieu, Frederick James	<i>Akron, Colo.</i>	Hagerman Hall.
Van Vechten, Eleanor Davenport	<i>Colorado Springs.</i>	510 Cheyenne Road.
Waiss, Fred Abert (B)	<i>Colorado Springs.</i>	424 E. Platte Ave.
Walker, Louise Annette	<i>Grand Junction.</i>	Ticknor Hall.
Wallin, Victor Bryan	<i>Balboa Heights, Canal Zone.</i>	Plaza Hotel.
Wallis, Lynn Bodine (E)	<i>La Junta, Colo.</i>	
Waltermire, Robert Brooks (B)	<i>Denver, Colo.</i>	1122 N. Cascade Ave.
Waugh, John Young	<i>Colorado Springs.</i>	1221 Wood Ave.
Weber, Clarence Adam	<i>Boulder, Colo.</i>	Plaza Hotel.
Weigen, Magdalene	<i>Colorado Springs.</i>	1616 Cheyenne Blvd.
Weldie, Ralph Edson	<i>Colorado Springs.</i>	818 N. Nevada Ave.
Weller, Hiram Dillard (B)	<i>Maitland, Mo.</i>	911 N. Nevada Ave.
West, Lena Florence	<i>Rocky Ford, Colo.</i>	Bemis Hall.
Wheeler, Howard Sidney (B)	<i>Denver, Colo.</i>	911 N. Nevada Ave.
Whipple, Donald McCrum	<i>Cheyenne, Wyo.</i>	923 N. Weber St.
White, Adrian Dunbaugh	<i>Denver, Colo.</i>	27 W. Cache la Poudre.
White, Charles McClain	<i>Craig, Colo.</i>	1106 N. Weber St.
White, Dorothy Winona	<i>Colorado Springs.</i>	Montgomery Hall.
White, Paul Raymond	<i>Fountain, Colo.</i>	1018 N. Weber St.
Wigram, Ethel Lenore	<i>Delta, Colo.</i>	Ticknor Hall.
Wilder, Rebecca Hubbard	<i>Denver, Colo.</i>	Montgomery Hall.
Wilfley, Robert	<i>Colorado Springs.</i>	520 E. Dale St.
Wilkin, Philip (F)	<i>Canon City, Colo.</i>	1319 N. Nevada Ave.
Williams, George Karl (E)	<i>Ainsworth, Neb.</i>	Hagerman Hall.
Wilson, Arthur Nash	<i>Pueblo, Colo.</i>	Plaza Hotel.
Wilson, Mabel Christina	<i>Eaton, Colo.</i>	Ticknor Hall.
Wolfe, Raymond Harrison	<i>Greeley, Colo.</i>	911 N. Nevada Ave.
Woodson, Samuel Cameron (B)	<i>Mason City, Neb.</i>	1431 N. Royer St.
Work, Dorcas	<i>Pueblo, Colo.</i>	Bemis Hall.
Work, Robert van Horn (E)	<i>Pueblo, Colo.</i>	1129 N. Nevada Ave.
Zimmeht, John Albert (E)	<i>Colorado City, Colo.</i>	1833 Washington Ave.

SPECIALS AND REGISTERED VISITORS.

Aldrich, Mrs. Mary E.	<i>Colorado Springs.</i>	Colorado Springs.
Allen, Hope	<i>Colorado Springs.</i>	Broadmoor.
Anderson, Daisy	<i>Colorado Springs.</i>	1112 N. Cascade Ave.
Anderson, Hattie Rebecca	<i>La Crosse, Wis.</i>	1414 N. Nevada Ave.
Anderson, Margaret	<i>Colorado Springs.</i>	1117 N. Cascade Ave.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Armit, Berthe	<i>Colorado Springs.</i>	1314 N. Weber St.
Arnold, Mrs. Jane A.	<i>Colorado Springs.</i>	2211 N. Nevada Ave.
Arnold, Mrs. Mabel Stark	<i>Colorado Springs.</i>	423 N. Wahsatch Ave.
Baker, Jessie	<i>Colorado Springs.</i>	Broadmoor.
Bartlett, Maud	<i>London, Eng.</i>	Broadmoor.
Beatty, J. Eugene (F)	<i>Tucson, Ariz.</i>	219 E. Dale St.
Blackman, Ida	<i>Colorado Springs.</i>	1806 Wood Ave.
Burgess, Samuel T.	<i>Colorado Springs.</i>	823 N. Corona St.
Cameron, Stella May	<i>Shreveport, La.</i>	1327 N. Nevada Ave.
Chisholm, Mrs. R. W.	<i>Colorado Springs.</i>	1903 Wood Ave.
Clarke, Elbert Russell	<i>Colorado Springs.</i>	732 N. Institute St.
Davis, Edna	<i>Colorado Springs.</i>	321 N. Weber St.
Day, Mary	<i>Boulder, Colo.</i>	Y. W. C. A.
Drea, William Francis	<i>Arlington, Mass.</i>	632 N. Nevada Ave.
Edgar, Dorothy Josephine	<i>Colorado Springs.</i>	1738 Wood Ave.
Gallagher, John Paul	<i>Indianapolis, Ind.</i>	19 E. Willamette Ave.
Gray, Natalie Hoyt	<i>Colorado Springs.</i>	715 N. Cascade Ave.
Gufler, Augusta	<i>Colorado Springs.</i>	116 E. Caramillo St.
Harris, John Reno	<i>Albany, Ga.</i>	Alta Vista Hotel.
Harris, Susan S.	<i>Colorado Springs.</i>	Plaza Hotel.
Hays, Marion	<i>Cleveland, Ohio.</i>	731 N. Cascade Ave.
Herrmann, Joseph	<i>Colorado Springs.</i>	Colorado Springs.
Hertel, Harper	<i>Golden, Colo.</i>	Plaza Hotel.
Hutchison, Paul Gilmor	<i>Kansas City, Mo.</i>	736 E. High St.
Jackson, Nancy L.	<i>Colorado Springs.</i>	1126 Glen Ave.
Koch, Almeda C.	<i>Colorado Springs.</i>	1130 N. Wahsatch Ave.
Krause, Mrs. George	<i>Colorado Springs.</i>	1421 Wood Ave.
Leighton, Florence Mae	<i>Colorado Springs.</i>	1410 N. Tejon St.
Leonard, Major Henry	<i>Colorado Springs.</i>	1435 Cascade Ave.
McAdoo, Ola	<i>Springfield, Mo.</i>	804 E. Kiowa St.
McComb, Marie	<i>Lakeview, Ore.</i>	Manitou, Colo.
McFarlane, Albert Charles	<i>Victor, Colo.</i>	732 N. Wahsatch Ave.
Mechem, Philip Russell	<i>Chicago, Ills.</i>	Broadmoor.
Osborne, Dorothy Delano	<i>Colorado Springs.</i>	318 E. San Rafael St.
Otis, Mabel Jessie	<i>Colorado Springs.</i>	811 N. Tejon St.
Perfect, Josephine Holt	<i>Brooklyn, N. Y.</i>	Manitou, Colo.
Potter, Kathryn Louise	<i>Colorado Springs.</i>	1211 N. Wahsatch Ave.
Reed, Mrs. Margaret S.	<i>Colorado Springs.</i>	1815 N. Nevada Ave.
Ritter, Margaret Tod	<i>Colorado Springs.</i>	1705 N. Tejon St.
Rollow, Eloise	<i>Wynnewood, Okla.</i>	1327 N. Nevada Ave.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Semmes, Frances C.	<i>Baltimore, Md.</i>	The Antlers.
Shober, Anne Bond	<i>Colorado Springs.</i>	Broadmoor.
Smillie, Cecile Clare	<i>Eaton, Colo.</i>	Ticknor Hall.
Spencer, Emily Frances	<i>Colorado Springs.</i>	2015 N. Tejon St.
Spencer, Mrs. Lillian Dean	<i>Camby, Ind.</i>	Colorado City, Colo.
Staff, Helen	<i>Colorado Springs.</i>	1343 N. Nevada Ave.
Stevens, Mrs. Frank	<i>Colorado Springs.</i>	1109 Wood Ave.
Stewart, Stella	<i>Colorado Springs.</i>	Cheyenne Blvd.
Stowers, Janette Porter	<i>Oxford, Miss.</i>	1004 N. Wahsatch Ave.
Taylor, Mrs. F. M. P.	<i>Colorado Springs.</i>	1238 Wood Ave.
Terrell, Eva Marjorie	<i>Grand Rapids, Mich.</i>	1140 Wood Ave.
Wagner, Mrs. George G.	<i>Telluride, Colo.</i>	926 N. Wahsatch Ave.
Washburn, Eleanor Phillips	<i>Colorado Springs.</i>	9 E. Cache la Poudre.
Webster, Walter Livingston	<i>Colorado Springs.</i>	1341 N. Tejon St.
Whitney, Pauline Gertrude	<i>Colorado Springs.</i>	1527 N. Nevada Ave.
Willis, Willet R.	<i>Colorado Springs.</i>	530 S. Nevada Ave.
Wilson, Mrs. Blanche	<i>Colorado Springs.</i>	501 N. Spruce St.
Wolff, Walter Victor	<i>Colorado Springs.</i>	1324 N. Weber St.
Wood, Cleora Harriet	<i>Colorado Springs.</i>	Gladstone Apts.
Wynne, Eloise	<i>Colorado Springs.</i>	913 N. Wahsatch Ave.
Yokozawa, Tsugi	<i>Negihi Sendai, Japan</i>	Ticknor Hall.

DEPARTMENT OF MUSIC.

Barnett, Corinne MacKenzie	<i>Denver, Colo.</i>	McGregor Hall.
Bell, Mary Gertrude	<i>Colorado Springs.</i>	320 E. Kiowa St.
Black, Elsie Dell	<i>Colorado Springs.</i>	219 N. Wahsatch Ave.
Bock, Adolph	<i>St. Joseph, Mo.</i>	632 N. Nevada Ave.
Carroll, Kathleen Gardner	<i>Colorado Springs.</i>	306 E. Bijou St.
Carroll, Nathalie	<i>Colorado Springs.</i>	306 E. Bijou St.
Cogswell, Dorothy	<i>Colorado Springs.</i>	330 E. Cache la Poudre.
Cogswell, Helen	<i>Colorado Springs.</i>	330 E. Cache la Poudre.
Coray, Fannie May	<i>Colorado Springs.</i>	1214 Lincoln Ave.
Cowan, Jessie Augusta	<i>Brewster.</i>	1424 N. Nevada Ave.
Crick, Bernice Geneva	<i>Pueblo, Colo.</i>	Bemis Hall.
Day, Mary	<i>Boulder, Colo.</i>	Y. W. C. A.
Deane, Ruth	<i>Colorado Springs.</i>	419 N. Pine St.
De Nio, Lois	<i>Colorado Springs.</i>	25 E. Las Animas St.
Dunn, Mary Olive	<i>Colorado Springs.</i>	
Dunton, Vera Marguerite	<i>Colorado Springs.</i>	2011 N. Nevada Ave.
Eiseman, Alice Stix	<i>Colorado Springs.</i>	1715 N. Nevada Ave.
Friedman Mrs. Joseph	<i>Colorado Springs.</i>	815 E. Monument St.
Gildea, Edwin Francis	<i>Colorado Springs.</i>	2220 N. Cascade Ave.
Gimlett, Dorothy Evangeline	<i>Salida, Colo.</i>	McGregor Hall.

NAME.	HOME ADDRESS.	CITY ADDRESS.
Gorman, Norton Vincent	<i>Golden, Colo.</i>	412 N. Tejon St.
Grindley, Laura Maysie	<i>Colorado Springs.</i>	324 Mesa Road.
Griswold, Beryl	<i>Colorado Springs.</i>	915 N. Weber St.
Hale, Helen Bartlett	<i>Colorado Springs.</i>	1424 N. Nevada Ave.
Hall, Mary Roana	<i>Denver, Colo.</i>	Ticknor Hall.
Halpin, Eleanor Dixon	<i>Mack, Colo.</i>	Ticknor Hall.
Hamilton, Josephine Margaret	<i>Colorado Springs.</i>	315 E. Willamette Ave.
Hartenstein, Helen Louise	<i>Buena Vista, Colo.</i>	Bemis Hall.
Haverstock, Jo	<i>Colorado Springs.</i>	1800 Cheyenne Road.
Hayerford, Anita Sophia Pearl	<i>Belen, N. Mex.</i>	Ticknor Hall.
Johnson, Alan Hawley	<i>Denver, Colo.</i>	409 N. Tejon St.
Johnston, Ruth	<i>Hooper, Colo.</i>	Ticknor Hall.
Keith, Dorothy	<i>Denver, Colo.</i>	Ticknor Hall.
Kidwell, Lela Leo	<i>Loveland, Colo.</i>	McGregor Hall.
Koch, Dorothy	<i>Aspen, Colo.</i>	McGregor Hall.
Korsmeyer, Helen	<i>Colorado Springs.</i>	1411 N. Weber St.
Kuver, Helen Anna	<i>Trinidad, Colo.</i>	Bemis Hall.
Leighton, Florence Mae	<i>Colorado Springs.</i>	1410 N. Tejon St.
McClellan, Laura Lucile	<i>Elizabeth, Colo.</i>	McGregor Hall.
McComb, Marie Lola	<i>Lakeview, Ore.</i>	Manitou, Colo.
McKlveen, Marguerite	<i>Denver, Colo.</i>	McGregor Hall.
Metcalf, Marjorie	<i>Denver, Colo.</i>	Bemis Hall.
Mosgrove, Helen Elizabeth	<i>Salida, Colo.</i>	McGregor Hall.
Nelson, Bernice	<i>Ogallala, Neb.</i>	Ticknor Hall.
Nichols, Ruth Leona	<i>Colorado Springs.</i>	Broadmoor.
Paige, Margaret	<i>Colorado Springs.</i>	315 E. Monument St.
Perfect, Josephine Holt	<i>Brooklyn, N. Y.</i>	Manitou, Colo.
Perkins, Flora Dunreath	<i>Salida, Colo.</i>	McGregor Hall.
Rhinehart, Josephine Marjorie	<i>Fountain, Colo.</i>	Fountain, Colo.
Rockwell, Helen Lenore	<i>Salt Lake City, Utah</i>	McGregor Hall.
Smillie, Cecile Clare	<i>Eaton, Colo.</i>	Ticknor Hall.
Smith, Alice Evelyn	<i>Denver, Colo.</i>	McGregor Hall.
Spangenberg, Geraldine Hume	<i>Colorado Springs.</i>	Y. W. C. A.
Stahl, Helen	<i>Denver, Colo.</i>	1204 N. Weber St.
Stowers, Janette Porter	<i>Oxford, Miss.</i>	1004 N. Wahsatch Ave.
Sutton, James Edward	<i>Denver, Colo.</i>	911 N. Nevada Ave.
Tubbs, Lois	<i>Colorado Springs.</i>	421 N. Pine St.
Walker, Dorothy	<i>Colorado Springs.</i>	302 E. Pikes Peak Ave.
Walter, Thelma Minnie	<i>Silverton, Colo.</i>	Montgomery Hall.
Warnock, Janet Zilpah	<i>Loveland, Colo.</i>	Bemis Hall.
White, Adrian Dunbaugh	<i>Denver, Colo.</i>	428 N. Weber St.
Williams, Lyle Gayle	<i>Colby, Kans.</i>	Bemis Hall.

SUMMARY.

Graduate Students.....	11
Seniors.....	82
Juniors.....	111
Sophomores.....	186
Freshmen.....	296
Specials and Visitors.....	66
Undergraduates.....	741
Total.....	752
School of Music.....	62
Names Counted Twice.....	814
Grand Total.....	36
	778

Index

	Page		Page
Academy of Fine Arts.....	106	Class Officers.....	21
Accredited Schools.....	29	College Buildings.....	102
Administration, Officers of.....	11	College Lecture Course.....	120
Admission by Certificate.....	28	College, Organization of.....	7
Admission to Advanced Standing.....	30	College Publication.....	119
Admission, Requirements for—		Commencement, 1916.....	128-130
In Departments of Arts and Sciences,		Committees of the Faculty.....	20
and Business Administration and		Committees of the Trustees.....	10
Banking.....	22	Courses of Instruction.....	46-95
In Departments of Engineering and		Art.....	46
Forestry.....	23	Astronomy.....	47
In Department of Music.....	97	Biblical Literature and Applied Religion	47
Advanced Degrees.....	43	Biology.....	49
Alumni Association.....	120	Business Administration and Banking..	53
Art and Music, Major in.....	100	Chemistry.....	55
Art Collections.....	106	Civil and Irrigation Engineering.....	58
Art. Courses in.....	46	Economics and Sociology.....	63
Astronomy—		Education.....	65
Courses in.....	47	Electrical Engineering.....	66
Observatory and Meteorological Station	113	English.....	69
Bachelor of Arts Degree.....	31	Forestry.....	72
Bachelor of Arts in Business Administra-		Geology.....	75
tion and Banking, Degree of.....	34	German.....	76
Bachelor of Science in Civil and Irrigation		Graphics.....	77
Engineering, Degree of.....	36	Greek.....	79
Bachelor of Science in Electrical Engineer-		History.....	80
ing, Degree of.....	39	Latin.....	82
Bequest, Forms of.....	127	Mathematics.....	83
Biblical Literature and Applied Religion,		Music.....	84
Courses in.....	47	Philosophy.....	84
Biology—		Physical Education.....	86
Courses in.....	49	Physics.....	88
Entrance Requirements in.....	28	Political Science.....	89
Laboratories.....	107	Public Speaking.....	90
Buildings, College.....	102	Romance Languages.....	91
Business Administration and Banking,		Shop Work.....	94
Courses in.....	53	Teachers, Courses for.....	95
Calendar.....	5	Degrees, Authority to Confer.....	8
Chemistry—		Degrees Conferred in 1916.....	129-30
Courses in.....	55	Degrees, Requirements for—	
Entrance Requirements in.....	28	Advanced.....	43
Laboratories.....	108	Bachelor of Arts.....	31-34
Civil and Irrigation Engineering—		Bachelor of Arts in Business Adminis-	
Courses in.....	58	tration and Banking.....	34
Laboratories.....	110	Bachelor of Science in Civil and Irriga-	
Civil Engineer and Electrical Engineer,		tion Engineering.....	36
Degrees of.....	44		

	Page		Page
Bachelor of Science in Electrical Engineering.....	39	Greek—	
Civil Engineer and Electrical Engineer.....	44	Courses in.....	79
Forest Engineer.....	41	Entrance Requirements in.....	26
General Rules.....	31	Harvard Exchange.....	45
Master of Arts.....	43	Historical Statement.....	
Department of Music—		History—	
Admission.....	97	Courses in.....	80
Courses of Study.....	97	Entrance Requirements in.....	25
Equipment.....	100	Honors, 1916.....	128
Faculty.....	96	Hospital Fund.....	125
Major in Art and Music.....	100	Illustrative Apparatus and Material.....	111
Students in.....	148	Instruction, Courses of; see Courses of In-	
Tuition.....	100	struction.	
Economics and Sociology, Courses in.....	63	Italian; see Romance Languages.	
Education, Courses in.....	65	Laboratories and Apparatus—	
Electives for Bachelor of Arts.....	33	Biology.....	107
Electrical Engineering—		Chemistry.....	108
Courses in.....	66	Civil Engineering.....	110
Laboratories.....	112	Electrical Engineering.....	112
English—		Geology.....	108
Courses in.....	69	Illustrative Apparatus and Material.....	111
Entrance Requirements in.....	24	Manitou Forest—Field Laboratory in	
Entrance Requirements; see Requirements		Forestry.....	112
for Admission.		Observatory and Meteorological Station	113
Expenses.....	120	Physics.....	108
Faculty.....	12	Psychology.....	109
Faculty in Department of Music.....	96	Shops.....	109
Faculty, Committees of.....	20	Surveying—Summer School.....	111
Forest Engineer, Degree of.....	41	Latin—	
Foresters' Club.....	118	Courses in.....	82
Forestry—		Entrance Requirements in.....	26
Courses in.....	72	Lecture Course, College.....	120
Manitou Forest—Field Laboratory in		Library.....	105
Forestry.....	112	Literary Societies.....	118
Forms of Bequest.....	127	Location of College.....	102
French; see Romance Languages.		Major in Art and Music.....	100
General Information.....	102	Major Subject for Bachelor of Arts.....	33
General Rules for Degrees.....	31	Manitou Forest—a Field Laboratory in	
Geology—		Forestry.....	112
Courses in.....	75	Master of Arts, Degree of.....	43
Entrance Requirements in.....	28	Mathematics—	
Laboratories.....	108	Courses in.....	83
German—		Entrance Requirements in.....	26
Courses in.....	76	Museum.....	113
Entrance Requirements in.....	27	Music, Courses in.....	84
Graduate Students.....	131	Music, Department of; see Department of	
Graphics, Courses in.....	77	Music.	
		Needs of College.....	125
		Observatory and Meteorological Station.....	113

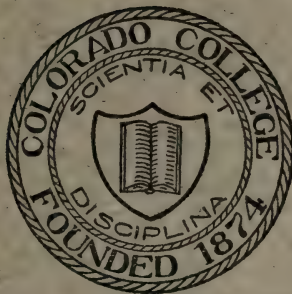
	Page		Page
Officers of Administration.....	11	Scholarships.....	122
Oratorical and Debating Contests.....	119	Scholarships Awarded, 1916.....	128
Organization of the College.....	7	Shop Work—	
Phi Beta Kappa.....	119	Courses in.....	94
Phi Beta Kappa Elections, 1916.....	128	Shops.....	109
Philosophy, Courses in.....	84	Spanish; see Romance Languages.	
Physical Education, Courses in.....	86	Special Students.....	30
Physics—		Student Commission of Colorado College,	
Courses in.....	88	The.....	118
Entrance Requirements in.....	28	Student Publications.....	118
Laboratories.....	108	Student, Register of—	
Political Science, Courses in.....	89	Graduate Students.....	131
Public Lectures and Readings.....	120	Seniors.....	131
Public Speaking, Courses in.....	90	Juniors.....	133
Publication, College.....	119	Sophomores.....	136
Publications, Student.....	118	Freshmen.....	140
Registration.....	22	Specials and Registered Visitors.....	146
Religious Life.....	116	Department of Music.....	148
Requirements for Admission—		Summary.....	150
In Departments of Arts and Sciences,		Summary of Students.....	150
and Business Administration and		Surveying—Summer School.....	111
Banking.....	22	Teachers, Courses for.....	95
In Departments of Engineering and		Trustees.....	9
Forestry.....	23	Trustees, Committees of.....	10
In Department of Music.....	97	Tuition.....	120
Requirements for Degrees; see Degrees,		Tuition in Music.....	100
Requirements for.		Undergraduates.....	131-146
Romance Languages—		Unit Courses Required for Admission....	24
Courses in.....	91	Woman's Educational Society.....	124
Entrance Requirements in.....	27		

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GENERAL SERIES 96



CATALOG

FEBRUARY, 1918

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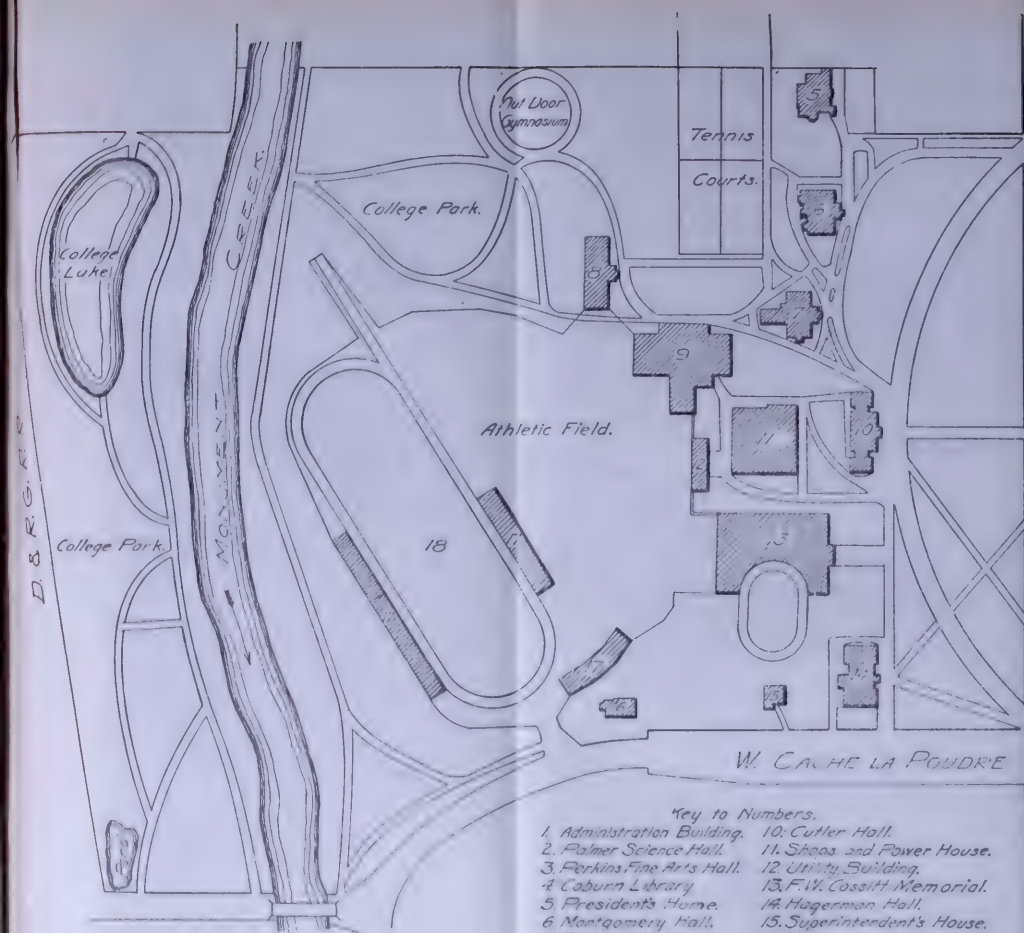
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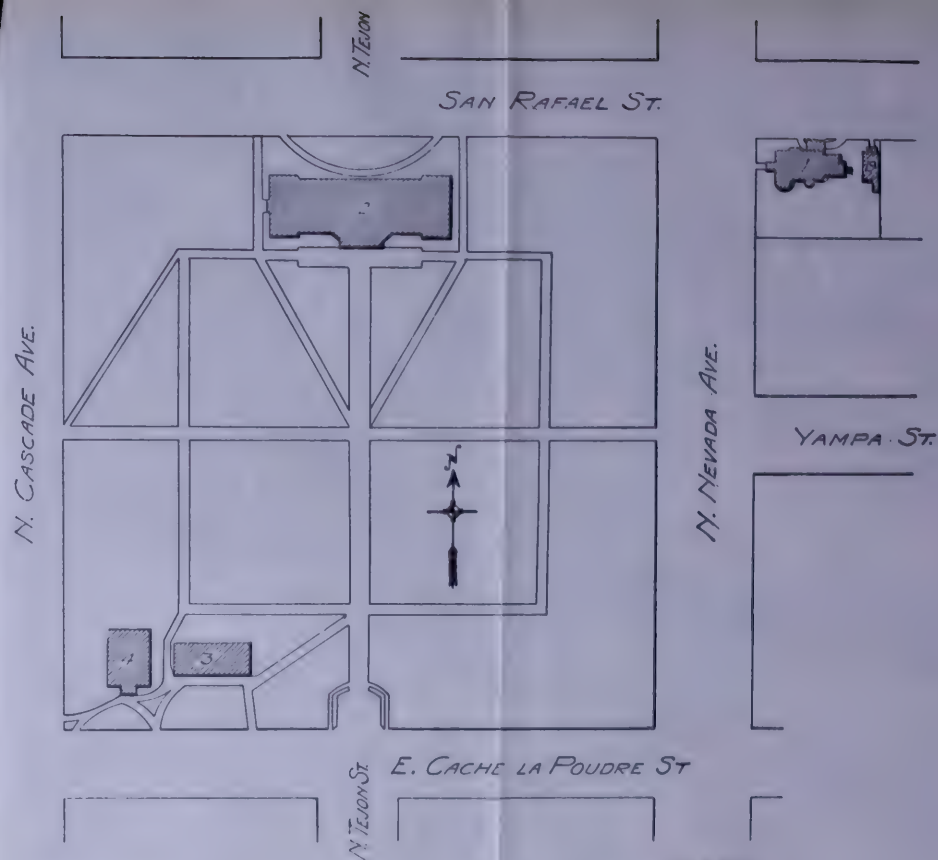
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THE
JOHN CRERAR
LIBRARY

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- Key to Numbers.
- | | |
|-----------------------------|------------------------------|
| 1. Administration Building. | 10. Cutler Hall. |
| 2. Palmer Science Hall. | 11. Shops and Power House. |
| 3. Perkins Fine Arts Hall. | 12. Utility Building. |
| 4. Caburn Library. | 13. F.W. Cossitt Memorial. |
| 5. President's Home. | 14. Hagerman Hall. |
| 6. Montgomery Hall. | 15. Superintendent's House. |
| 7. Ticknor Hall. | 16. Observatory. |
| 8. McGregor Hall. | 17. Grand Stands. |
| 9. Serms. Hall. | 18. Washburn Athletic Field. |
| | 19. Garage. |



MAP
OF THE
COLORADO COLLEGE
CAMPUS.

COLORADO COLLEGE PUBLICATION

BULLETIN SERIES No. 50

GENERAL SERIES No. 96

FORTY-FOURTH
ANNUAL CATALOG

---of---

Colorado College



1917-1918
COLORADO SPRINGS
COLORADO

Contents

	PAGE
Calendar	5
Historical Statement	6
Organization of the College.....	7
Trustees	9
Standing Committees of the Trustees.....	10
Officers of Administration	11
Faculty	12
Committees of the Faculty.....	21
Class Officers	22
Admission—	
Registration	23
Entrance Requirements—	
For Courses leading to the Degrees of Bachelor of Arts, and Bachelor of Arts in Business Ad- ministration and Banking	23
For Courses leading to the Degrees of Bachelor of Science in Engineering and Forest Engineer....	24
Unit Courses	25
Admission by Certificate	30
Accredited Schools	30
Admission to Advanced Standing.....	31
Special Students	32
Requirements for Degrees—	
General Rules	33
Degree of Bachelor of Arts.....	33
Required Subjects	33
Requirements Arranged by Years.....	34
Major Subject	35
Electives	36
Degree of Bachelor of Arts in Business Administration and Banking	36
Degree of Bachelor of Science in Civil and Irrigation Engineering	39
Degree of Bachelor of Science in Electrical Engineering	41
Degree of Forest Engineer.....	44
Advanced Degrees	46
Degree of Master of Arts.....	47
Degrees of Civil Engineer and Electrical Engineer.....	47

	PAGE
The Harvard Exchange	48
Courses of Instruction—	
Art ..	49
Astronomy ..	50
Biblical Literature and Applied Religion.....	51
Biology ..	52
Business Administration and Banking.....	57
Chemistry ..	60
Civil and Irrigation Engineering.....	64
Economics and Sociology.....	69
Education ..	71
Electrical Engineering ..	73
English ..	77
Forestry ..	80
Geology ..	83
German ..	84
Graphics ..	86
Greek ..	87
History ..	88
Latin ..	91
Mathematics ..	93
Music ..	94
Philosophy ..	94
Physical Education ..	96
Physics ..	98
Political Science ..	100
Public Speaking ..	101
Romance Languages ..	101
Shop Work ..	105
Teachers, Courses for.....	106
Department of Music—	
Faculty ..	107
Admission ..	108
Courses of Study.....	108
Major in Art and Music.....	112
Equipment ..	112
Tuition ..	112
Academy of Fine Arts.....	114

	PAGE
General Information—	
Location ..	116
College Buildings ..	116
Library ..	119
Art Collections ..	120
Laboratories and Apparatus—	
Biology ..	121
Chemistry ..	122
Geology ..	122
Physics ..	123
Psychology ..	123
Shops ..	123
Civil Engineering Laboratories.....	124
Surveying — Summer School.....	125
Illustrative Apparatus and Material.....	125
Electrical Engineering Laboratories.....	126
The Manitou Forest—a Field Laboratory in Fores- try ..	126
Observatory and Meteorological Station.....	127
Museum ..	128
Religious Life ..	130
Student Publications ..	132
Literary Societies ..	132
Engineers' Club ..	132
The Student Commission of Colorado College.....	132
Oratorical and Debating Contests.....	132
Phi Beta Kappa ..	133
College Publication ..	133
Public Lectures and Readings.....	134
Alumni Association ..	134
Expenses ..	134
Scholarships ..	136
Woman's Educational Society ..	138
Hospital Fund ..	139
Needs of College ..	139
Forms of Bequest.....	141
Award of Honors and Scholarships, Phi Beta Kappa Elec- tions, 1917 ..	142
Degrees Conferred in 1917.....	143

Students—

Graduate Students	145
Undergraduates ..	145-156
Specials and Registered Visitors.....	156-157
Department of Music	158-159
Summary ..	159

Calendar

1918

Jan. 8—CHRISTMAS RECESS ENDS at 8 a. m.....	Tuesday
Jan. 17—Mid-Year Examinations begin.....	Thursday
Jan. 25—Trustees' Day	Friday
Jan. 28—SECOND HALF-YEAR BEGINS at 8 a. m.....	Monday
Feb. 22—Washington's Birthday: a holiday.....	Friday
Feb. 23—Condition Examinations begin at 8 a. m.....	Saturday
Feb. 24—Day of Prayer for Colleges.....	Sunday
Mar. 19—Last day for registering for Hawley and Mary G. Slocum scholarships.....	Tuesday
May 24—Examinations Begin ..	Friday
May 26—Baccalaureate Sermon	Sunday
May 27—Class Day	Monday
May 28—Annual Meeting of Board of Trustees.....	Tuesday
*May 29—COMMENCEMENT ..	Wednesday
June 3—Summer School of Surveying opens in Manitou Park	Monday
Sept. 10—Registration ..	Tuesday
Sept. 10—Residence Halls open.....	Tuesday
Sept. 11—FIRST HALF-YEAR BEGINS at 8 a. m.....	Wednesday
Sept. 14—Condition Examinations for Engineers, 8 a. m.	Saturday
Sept. 21—Condition Examinations begin at 8 a. m.....	Saturday
Oct. 11—Last day for registering for post-grad- uate work	Friday
Oct. 18—Insignia Day	Friday
Nov. 27—Thanksgiving Recess begins at 5 p. m.....	Wednesday
Dec. 2—Thanksgiving Recess ends at 8 a. m.....	Monday
Dec. 20—CHRISTMAS RECESS BEGINS at 5 p. m.....	Friday

1919

Jan. 7—CHRISTMAS RECESS ENDS at 8 a. m.....	Tuesday
Jan. 16—Mid-Year Examinations begin.....	Thursday
Jan. 24—Trustees' Day	Friday
Jan. 27—SECOND HALF-YEAR BEGINS at 8 a. m.....	Monday
Feb. 15—Condition Examinations begin at 8 a. m.....	Saturday
Feb. 22—Washington's Birthday: a holiday.....	Saturday
Feb. 23—Day of Prayer for Colleges.....	Sunday
Mar. 18—Last day for registering for Hawley and Mary G. Slocum scholarships.....	Tuesday
Mar. 29—SPRING RECESS BEGINS at 1 p. m.....	Saturday
Apr. 8—SPRING RECESS ENDS at 8 a. m.....	Tuesday
Apr. 18—Good Friday: a holiday.....	Friday
May 30—Memorial Day: a holiday.....	Friday
May 31—Examinations begin	Saturday
June 2—Summer School of Surveying opens in Manitou Park	Monday
June 8—Baccalaureate Sermon	Sunday
June 9—Class Day	Monday
June 10—Annual Meeting of Board of Trustees	Tuesday
June 11—COMMENCEMENT ..	Wednesday

*On account of war conditions Spring Recess for 1918 is omitted and the half-year closes earlier than usual.

Historical Statement.

Colorado College is the oldest institution of higher education in the State. In 1874, while Colorado was yet a territory, a College upon a broad Christian foundation was established in Colorado Springs. A grant of land had been made in advance of the organization of the College in 1873 by the Colorado Springs Company, the founders of the City of Colorado Springs. The Congregational denomination, so famous for building colleges, gave, in the first years of the struggle, warm sanction and helpful guidance. With devotion and a spirit of true piety, they joined in the up-building of the College. Trustees were elected, a charter was secured, and the Rev. Jonathan Edwards became the first professor and executive officer. The authorized announcement for that year contains the following:

"It is the purpose of the Trustees to build a College in which liberal studies may be pursued under positive Christian influences. . . . The College is under no ecclesiastical or political control. Members of different churches are on its Board of Trustees. . . . The character which is most desired for this college is that of thorough scholarship and fervent piety, each assisting the other, and neither ever offered as a compensation for the defects of the other."

From the beginning, the Board of Trustees has been composed of leading professional and business men of Colorado, together with a few Eastern men of similar standing, and has ever been animated by the purpose avowed by the original Board.

The first President, the Rev. James Dougherty, was elected in 1875, and was succeeded in the following year by the Rev. E. P. Tenney. From 1885 to 1888 there was no President, but the work of teaching was carried on without interruption. At this time there was only one building on the campus, now known as Cutler Hall, erected in 1880.

William Frederick Slocum was elected President in 1888. The faculty was at once enlarged, the courses reorganized, and Cutler Academy* incorporated as an associate preparatory school, in which students were trained during twenty-six years,

*Discontinued in June, 1914.

not only for Colorado College, but for all the leading institutions of the United States. A residence for the President was purchased. Hagerman Hall was built in 1889. In the same year the Woman's Educational Society was organized and built Montgomery Hall.

The following buildings have been erected since that time: The N. P. Coburn Library, 1894; the Henry R. Wolcott Observatory, 1894; Ticknor Hall, 1897; Perkins Fine Arts Hall, 1900; McGregor Hall, 1903; Palmer Hall, 1903; Bemis Hall, 1908; Cossitt Memorial, 1914; and the Administration Building, a gift acquired in the summer of 1914. The President's residence was remodeled and enlarged in 1903.

In 1903 a Department of Engineering, with Dr. Florian Cajori as Dean, was opened to meet the increasing demand in the Rocky Mountain region for instruction in applied science. The first class was graduated in 1906.

Through the generosity of General William J. Palmer and Dr. W. A. Bell, who in 1905 presented to the College a tract of 10,000 acres of timber land called Manitou Park, the foundation was laid for a Department of Forestry. This work began in 1906, with Dr. William C. Sturgis as Dean.

A Department of Business Administration and Banking, with Dr. Warren M. Persons as Dean was established in 1914 with the special income of \$6,000 a year. The work offered is designed to meet the needs of students preparing for business, banking, foreign exchange, journalism, consular service, and secretarial work.

ORGANIZATION OF THE COLLEGE.

Colorado College was incorporated under the general provisions of Section 5, Article 2, of Chapter 18 of the Revised Statutes of the Territory of Colorado. The Charter, dated February 4, 1874, and filed with the Recorder of El Paso County, Colorado, on February 17, 1874, includes the following articles: "FIRST. The corporate name of said corporation shall be THE COLORADO COLLEGE. SECOND. The object of this corporation is to locate and maintain at Colorado Springs under Christian auspices an institution of learning on the college or university plan. THIRD. The number of trustees of said corporation shall be not less than twelve nor more than eighteen. . . . FOURTH.

The existence of the said corporation, The Colorado College, is intended to be perpetual."

By a Certificate of Amendment dated June 13, 1907, and filed June 15, 1907 (in the manner prescribed by Chapter 139 of the Session Laws of 1907), to the above articles were added: "FIFTH. Seven of the said trustees present at any meeting shall constitute a quorum, and the Board of Trustees shall have power by vote of a quorum to fill vacancies in the Board. SIXTH. The said corporation shall never be under the control of a sect; no trustee, officer, member of any faculty, or student shall ever be required to belong to any specified sect and no theological test shall ever be imposed or applied as a condition of entrance in said College or of connection therewith."

The College is authorized to confer degrees by Section 1 of an Act of March 28, 1889 (Session Laws of 1889, p. 121), which states that, "Any corporation, now or hereafter existing for educational purposes, under the laws of this State, which shall maintain one or more institutions of learning of the grade of a university or college, shall have authority by its directors or board of trustees or by such person or persons, as may be designated by its constitution or by-laws, to confer such degrees and grant such diplomas and other marks of distinction as are usually conferred and granted by other universities and colleges of like grade."

Trustees

C. A. DUNIWAY, *Ex-officio President of the Board*.....
.....24 College Place

Term expires 1918

JOHN CAMPBELL.....824 Equitable Building, Denver
CHARLES M. MACNEILL.....301 Mining Exchange Building
FRANK TRUMBULL.....61 Broadway, New York

Term expires 1919

OLIVER H. SHOUP.....Exchange National Bank Building
WILLIAM LENNOX.....1001 N. Nevada Ave.
HENRY C. MCALLISTER, JR.....1880 Gaylord St., Denver

Term expires 1920

WILLIS R. ARMSTRONG.....1420 Culebra Ave.
GEORGE A. FOWLER.....1225 Wood Ave.
PHILIP B. STEWART.....1228 Wood Ave.

Term expires 1921

JUDSON M. BEMIS.....1238 Wood Ave.
BENJAMIN GRIFFITH..408 First National Bank Building, Denver

Term expires 1922

IRVING HOWBERT.....17 N. Weber St.
GEORGE FOSTER PEABODY.....Saratoga Springs, New York
E. P. SHOVE.....1329 Wood Ave.

Term expires 1923

GEO. W. BAILEY.....946 Equitable Building, Denver
MAHLON D. THATCHER.....First National Bank, Pueblo
WILLIAM M. VANCE.....1332 Wood Ave.

Standing Committees of the Trustees

EXECUTIVE

P. B. STEWART, *Chairman*; GEORGE W. BAILEY, OLIVER H. SHOUP,
IRVING HOWBERT, GEORGE FOSTER PEABODY.

FINANCE.

E. P. SHOVE, *Chairman*; WILLIAM LENNOX, *Vice-Chairman*;
J. M. BEMIS, GEORGE A. FOWLER, IRVING HOWBERT,
CHARLES M. MACNEILL, PHILIP B. STEWART,
MAHLON D. THATCHER, FRANK TRUMBULL,
WILLIAM M. VANCE.

FORESTRY SCHOOL

WILLIAM LENNOX, *Chairman*; BENJAMIN GRIFFITH, GEORGE A.
FOWLER, PHILIP B. STEWART.

GROUNDS AND BUILDINGS.

PHILIP B. STEWART, *Chairman*; HENRY MCALLISTER, JR., WILLIS
R. ARMSTRONG, WILLIAM M. VANCE.

INSTRUCTION.

JOHN CAMPBELL, *Chairman*; WILLIS R. ARMSTRONG, GEORGE W.
BAILEY, IRVING HOWBERT.

AUDITING.

IRVING HOWBERT, *Chairman*; J. M. BEMIS.

INVESTMENTS.

IRVING HOWBERT, *Chairman*; WILLIAM LENNOX, *Vice-Chairman*;
J. M. BEMIS, E. P. SHOVE, W. M. VANCE.

The President of the Board is ex-officio member of all committees.

Officers of Administration

CLYDE AUGUSTUS DUNIWAY, *President.*

ROGER HENWOOD MOTTEN, *Secretary of the College.*

WILLIAM WALLACE POSTLETHWAITE, *Treasurer.*

BENNETT & HALL, *Attorneys for the College.*

Faculty

CLYDE AUGUSTUS DUNIWAY, PH. D., LL. D.

President.

24 College Place

A. B. (Cornell) '92; A. M. (Harvard) '94; PH. D. (ibid.) '97;
LL. D. (University of Colorado), '14; LL. D. (University
of Denver) '14; Colorado College, '17.

WILLIAM FREDERICK SLOCUM, D. D., LL. D.

President and Head Professor of Philosophy, Emeritus.

A. B. (Amherst) '74; B. D. (Andover) '78; LL. D. (Amherst)
'93; LL. D. (Nebraska) '94; D. D. (Beloit) '01; LL. D.
(Illinois College) '04; LL. D. (Harvard) '12; LL. D. (Alle-
gheny and University of Colorado) '15; Colorado College,
'88.

GUY HARRY ALBRIGHT, A. M.

1523 N. Tejon St.

Professor of Mathematics and Astronomy.

PH. B. (Michigan) '99; A. B. (Harvard) '00; A. M. (ibid.) '13;
Colorado College, '07.

§SOLOMON BLUM, PH. D.

1824 N. Nevada Ave.

Professor of Economics.

A. B. (Johns Hopkins) '03; PH. D. (ibid.) '07; Colorado Col-
lege, '14.

JOSEPH VALENTINE BREITWIESER, PH. D.

322 E. San Miguel St.

Professor of Philosophy and Education.

A. B. (Indiana University) '07; A. M. (ibid.) '08; PH. D. (Co-
lumbia) '10; Colorado College, '10.

**MARIANNA BROWN, A. M.

Registrar.

A. B. (Earlham College); A. M. (Cornell) '94; Colorado Col-
lege, '02.

§Resigned, January, 1918.

**Resigned, November, 1917.

FLORIAN CAJORI, PH. D., LL. D., Sc. D. 1119 Wood Ave.
Dean of the Department of Engineering and
Head Professor of Mathematics.

S.B. (Wisconsin) '83; M.S. (ibid.) '86; PH. D. (Tulane) '94;
LL.D. (University of Colorado) '12; LL.D. (Colorado Col-
lege) '13; Sc.D. (Wisconsin) '13; Colorado College, '89.

MARION CHURCHILL, A. B. Bemis Hall
Dean of Women.

A.B. (Radcliffe) '06; Colorado College, '17.

*ELIJAH CLARENCE HILLS, PH.D., LITT.D.
12 College Place
Professor of Romance Languages and Literatures.

A.B. (Cornell) '92; Ph.D. (University of Colorado) '06; Litt.D.
(Rollins College) '06; Colorado College, '02.

GEORGE MAXWELL HOWE, PH.D. 1811 N. Nevada Ave.
Head Professor of the German Language and Literature.
A.B. (Indiana) '94; Ph.D. (Cornell) '01; Colorado College, '07.

MORRIS JOHNSON KERNALL, A. M. 701 N. Tejon St.
Professor of Biology.

A.B. (North Dakota) '06; A.M. (Illinois) '14; Colorado Col-
lege, '18.

FRANK HERBERT LOUD, PH.D. 1203 N. Tejon St.
Professor of Mathematics and Astronomy, Emeritus.

A.B. (Amherst) '73; A.M. (Harvard) '99; Ph.D. (Haverford)
'00; Colorado College, '77.

CHARLES CHRISTOPHER MIEROW, PH.D.
216 E. Espanola St.
Head Professor of Classical Language and Literature.

A.B. (Princeton) '05; A.M. (ibid.) '06; PH.D. (ibid.) '08; Colo-
rado College, '16.

JOSIE RAMBO MORROW, (MRS.) A.B.
2116 N. Nevada Ave.
Acting Registrar.

A.B. (University of Kansas) '06; Colorado College, '10.

ROGER HENWOOD MOTTEN, A.M. 7 Pelham Place
Professor of English and Secretary of the College.

A.B. (Allegheny) '01; A.M. (ibid.) '15; Colorado College, '09.

*Absent during the year 1917-18.

- ATHERTON NOYES, A.M. 1205 Wood Ave.
Professor of English.
 A.B. (Yale) '85; A.M. (Harvard) '16; Colorado College, '92.
- MANLY DAYTON ORMES, A.B., B.D. 1623 N. Tejon St.
Librarian.
 A.B. (Yale) '85; B.D. (ibid.) '89; Colorado College, '04.
- ‡JOHN CARL PARISH, PH.D. 224 E. Yampa St.
Professor of History.
 M.D. (Iowa State Teachers' College) '02; Ph.B. (State University of Iowa) '05; A.M. (ibid.) '06; Ph.D. (ibid.) '08; Colorado College, '14.
- GEORGE KYNETT PATTEE, A.M. Plaza Hotel
Acting Professor of English.
 A.B. (Dartmouth) '02; A.M. (ibid.) '03; Colorado College, '17.
- ‡WARREN MILTON PERSONS, PH.D. 123 Tyler Place
Dean of the Department of Business Administration and Banking, and Professor of Economics and Finance.
 B.S. (Wisconsin) '99; Ph.D. (Wisconsin) '15; Colorado College, '12.
- MARIE A. SAHM, A.M. 114 E. Uintah St.
Professor of the History of Art and Classical Archaeology.
 A.B. (Colorado College) '07; A.M. (ibid.) '08; Colorado College, '07;
- ‡EDWARD CHRISTIAN SCHNEIDER, PH.D., Sc.D. 218 E. Uintah St.
Head Professor of Biology.
 B.S. (Tabor) '97; Ph.D. (Yale) '01; Sc.D. (Denver University) '14; Colorado College, '03.
- WILLIAM STRIEBY, A.M., E.M., Sc.D. 805 N. Cascade Ave.
Head Professor of Chemistry and Metallurgy.
 A.B. (New York) '75; E.M. (Columbia School of Mines) '78; A.M. (ibid.) '79; Sc.D. (Colorado College) '13; Colorado College, '80.
- §LESTER BURTON STRUTHERS, PH.D. 1103 Wood Ave.
Professor of Romance Languages and Literatures.
 A.B. (Harvard) '10; A.M. (ibid.) '11; Ph.D. (ibid.) '16; Colorado College, '17.

‡Absent on war service.

§Resigned January, 1918.

- †ELWOOD IDELL TERRY, S.B. 1503 N. Nevada Ave.
Director of the Department of Forestry, and Professor of Forestry.
 S.B. (Harvard) '07; Colorado College, '11.
- *GEORGE BRINTON THOMAS, M.E. IN E.E. 205 W. Uintah St.
Professor of Electrical Engineering.
 M.E. in E.E. (Ohio State) '07; Colorado College, '10.
- ROLAND RAY TILESTON, A.M. 319 E. Columbia St.
Professor of Physics.
 A.B. (Dartmouth) '07; A.M. (ibid.) '11; Colorado College, '13.
- EDWARD ROYAL WARREN, S.B. 20 W. Caramillo St.
Director of the Museum.
 S.B. (Massachusetts Institute of Technology) '81; Colorado College; '09.
- ‡HORACE BURRINGTON BAKER, B.S. Administration Building
Assistant Professor of Biology.
 B.S. (Michigan) '10; Colorado College, '13.
- CHARLES AMOS DICE, A.M. 1224 N. Weber St.
Assistant Professor of Business Administration
 A.B. (Ohio Northern University) '05; A.M. (Harvard) '11; Colorado College, '17.
- ALBERT RUSSELL ELLINGWOOD, B.C.L., PH.D. 1514 N. Weber St.
Assistant Professor of Political Science.
 A.B. (Colorado College) '10; B.C.L. (Oxford) '13; Ph.D. (University of Pennsylvania) '18; Colorado College, '14.
- §ROBERT AUGUSTUS KLAHR, A.B., M.C.S. 315 E. Yampa St.
Assistant Professor of Accounting.
 A.B. (Dartmouth) '08; M.C.S. (ibid.); '09; Colorado College, '14.
- GRAYSON BELL McNAIR, B.S. IN E.E. 1001 N. Wahsatch
Acting Assistant Professor of Electrical Engineering and Director of Shops.
 B.S. in E.E. (Purdue) '08; Colorado College, '17.

†Exchange Professor at Harvard University, 1917-'18.

*Absent during the year 1917-18.

‡Absent on war service.

§Deceased.

- *HOWARD MOORE, C.E. 1140 Wood Ave.
Assistant Professor of Graphics.
 C.E. (Princeton) '93; Colorado College, '03.
- FRANK MORRIS OKEY, B.C.E. 1315 N. Weber St.
Assistant Professor of Civil Engineering.
 B.C.E. (Iowa State College) '04; Colorado College, '14.
- CHARLES ANTHONY BARNHART, A.M. 824 E. Costilla St.
Instructor in Mathematics.
 A.B. (Illinois) '05; A.M. (ibid.) '11; Colorado College, '17.
- FLORENCE MARIE BARRETT, M.A. McGregor Hall
Instructor in Romance Languages.
 Ph.B. (University of Chicago) '14; M.A. (ibid.) '15; Colorado College, '17.
- SAMUEL FLAGG BEMIS, Ph.D. 824 N. Tejon St.
Instructor in History.
 A.B. (Clark College), '12; A.M. (Clark University) '13; A.M. (Harvard) '15; Ph.D. (ibid.) '16; Colorado College, '17.
- ALFRED ATWATER BLACKMAN, M.D. 19 E. Cache la Poudre St.
Medical Adviser.
 M.D. (Denver University) '02; Colorado College, '04.
- §LEO WILLIAMS BORTREE, A.B., M.D. 2122 N. Tejon St.
Lecturer in Physiology.
 A.B. (Colorado College) '06; M.D. (Harvard) '10; Colorado College, '17.
- EVA TOLMAN CANON, A.B. Bemis Hall
Assistant Librarian.
 A.B. (Colorado College) '04; Colorado College, '08.
- *GUY WENDELL CLARK, A.M. 318 E. St. Vrain St.
Instructor in Chemistry.
 A.B. (Colorado College) '12; A.M. (ibid.) '14; Colorado College, '12.
- ELEANOR SOUTHGATE DAVIS Montgomery Hall
Instructor in Physical Education for Women.
 Graduate (Boston Normal School of Gymnastics) '07; Colorado College, '14.

*Absent during year 1917-18.

§Appointment from Nov. 16 to Jan. 26.

MABEL DOMINICK, PH.D. Montgomery Hall
Instructor in German.

A.B. (Cornell) '10; A.M. (Cornell) '12; Ph.D. (Cornell) '14;
Colorado College, '17.

MYRIAM CHRISTY GARRETT, A.B. 710 N. Cascade Ave.
Assistant in Biology.

A.B. (Colorado College) '17; Colorado College, '17.

FREDERICK MATTHEW GERLACH, A.M. Hagerman Hall
Instructor in Education and Psychology.

A.B. (Colorado College) '14; A.M. (ibid.) '15; Colorado College,
'15.

ELIZABETH WOOD GEROULD, A.B. Plaza Hotel
Assistant in Chemistry.

A.B. (Colorado College) '12; Colorado College, '17.

FRANCES HALL, A.B. 4 Boulder Crescent
Instructor in Latin and Greek.

A.B. (Colorado College) '12; Colorado College, '16.

MABEL MARGARET HARLAN, A.B. 1811 N. Nevada Ave.
Instructor in Romance Languages.

A.B. (Colorado College) '14; Colorado College, '17.

‡EDWARD JUNG HICKOX, A.B., B.P.E.
Instructor in Physical Education.

A.B. (Ohio Wesleyan) '05; B.P.E. (International Y. M. C. A.
College) '14; Colorado College, '14.

WILLIAM WHITNEY HITE, JR. 1512 N. Nevada Ave.
*Instructor in Military Science and Tactics and
Commandant of Cadets.*

First Lieutenant, Kentucky National Guard, Retired; Colorado
College, '17.

RAY FOSTER LOVE, A.B. 1425 N. Tejon St.
Instructor in Chemistry.

A.B. (Colorado College) '11; Colorado College, '16.

MABEL PARISH, A.M. Bemis Hall
Instructor in History.

M.D. (Iowa State Teachers' College) '06; A.B. (University of
Colorado) '14; A.M. (ibid.) '15; Colorado College, '16.

‡Absent on war service.

JAMES EARL ROBERTSON, B.S. in C.E.

311 E. Willamette Ave.

Instructor in Graphics.

B.S. in C.E. (Michigan Agricultural College) '09; Colorado College, '16.

CLAUDE JAMES ROTHGEB

1211 N. Weber St.

Director of Athletics, and Instructor in Physical Training.

§SOLOMON WIENSHENK SCHAEFFER, A.B., M.D.

1029 N. Nevada Ave.

Lecturer in Histology.

A.B. (Washington and Lee) '04; M.D. (Johns Hopkins) '09; Colorado College, '17.

§ELSIE SAUROUTE SCHNEIDER (MRS.), B.S.

315 E. Uintah St.

Lecturer in Biology.

B.S. (Tabor) '99; Colorado College, '17.

LOIS ELLETT SMITH, A.M.

McGregor Hall

Instructor in Biology.

A.B. (Colorado College) '12; A.M. (ibid.) '15; Colorado College, '12.

JESSIE DELINA STEWART, REGISTERED NURSE

Ticknor Hall

College Nurse.

Graduate of the Chicago Baptist Hospital; Colorado College, '10.

CHARLES EDGAR TAYLOR, A.M.

225 E. Jefferson St.

Instructor in Economics.

A.B. (Colorado College) '16; A.M. (Wisconsin) '17; Colorado College, '18.

EDWARD DANFORTH HALE, A.M.

1424 N. Nevada Ave.

Dean of the Department of Music, and Professor of the Theory and Literature of Music and the Pianoforte.

A.B. (Williams) '80; A.M. (ibid.) '83; Professor at the New England Conservatory, '85-'04; Colorado College, '05.

HENRY HOWARD BROWN,

1716 Wood Ave.

Instructor in Voice Culture.

Pupil of E. W. Glover (Ass't Director for Cincinnati May Festivals) '00; J. A. Broeckhaven, '00-'01; James Sauvage, '01; Dora Topping, '02-'04; Max Spicker, '03-'06; Amherst Weber (Coach of Mm. J. and E. de Reszke, Mmes. Nordica, Eames, and others) '05; Colorado College, '14.

§Appointment from Nov. 16 to Jan. 26.

DORA TOPPING BROWN (MRS.), 1716 Wood Ave.
Instructor in Public School Music.

Graduate in Music, State Normal School, St. Cloud, Minn., '88; Supervisor of Music in Public Schools, St. Cloud, Minn., '88-'93; Student in Voice Culture, New York, '93-'99; Student in piano and composition, Philadelphia Institute of Music, 1899; Colorado College, '17.

MABEL MARGARET HARLAN, A.B. 1811 N. Nevada Ave.
Instructor in Violin.

Soloist's Diploma in Violin (Colorado College) '14; Instructor in Violin (Daniel Baker College, Brownwood, Texas) '14-'17; Colorado College, '17.

*MRS. GEORGE MAXWELL HOWE, 1811 N. Nevada Ave.
Instructor in Violin.

Cincinnati Conservatory of Music, '01-'03; Stanton College, Natchez, Miss., '03-'05; Sternsches Konservatorium, Berlin, '05-'06; Woman's College, Columbia, S. C., '06-'07; Colorado College, '10.

EMMONS LUETSCHER, 1317 N. Weber St.
Instructor in Violinocello.

Pupil of Bruno Steindel, '10; Carl Brueckner, '11-'14; University of Wisconsin, '12-'14; Colorado College, '16.

*ALEXANDER PIRIE, A.R.C.O. 632 N. Nevada Ave.
Instructor in Organ.

Pupil of T. H. Collinson, Mus. Bac. F.R.C.O., Edinburgh, Scotland, for Organ, Harmony and Orchestration, '04-'06; Pupil of W. Townsend, College of Music, London, England, for Piano, '02-'04; Assistant Organist, The Cathedral, Edinburgh, Scotland, '07, '10; Assistant Organist to The University of Edinburgh, '07, '10; Associate of the Royal College of Organists, London, England, '07; Colorado College, '16.

CLARIBEL FISCHER, 731 N. Weber St.
Instructor in Music Education.

Colorado College, '12-'16; New York City, '16-'17; Colorado College, '17.

SUSAN FALKENBURG LEAMING 1614 Wood Ave.
Associate Director of The Academy of Fine Arts (Affiliated).
Art Institute, Chicago, '90-'93; Instructor Normal Department, Art Institute, Chicago, '01-'03; Pupil of Arthur W. Dow, Teachers' College, New York, '03; Art Director Teachers' Training School, New York, '03-'06; Director Art Department, Colorado Springs Schools, '17; Colorado College, '16.

*Absent on leave.

CHARLOTTE LEAMING

1614 Wood Ave.

*Associate Director of The Academy of Fine Arts (Affiliated).
Art Institute, Chicago, '98; Pupil of Albert Herter, New York,
'97; Frank Duveneck, Cincinnati, '98; William M. Chase,
New York, '99; Instructor Art Institute, Chicago, '99-'00;
Academy of Fine Arts, Chicago, '09-'10; Colorado College,
'16.*

EXCHANGE PROFESSORS AND LECTURERS.

AT COLORADO COLLEGE.

WILLIAM HENRY SCHOFIELD, Ph.D.

*Professor of Comparative Literature at Harvard University.
Exchange Professor in the Second Half-Year, 1917-'18.*

AT HARVARD UNIVERSITY.

EDWARD IDELL TERRY, S.B.

*Professor of Forestry.
Exchange Professor at Harvard University for the year,
1917-'18.*

Committees of the Faculty, 1917-1918

Administration—Mr. Duniway, Mr. Cajori, Miss Brown, Miss Churchill, Mr. Mierow, Mr. Motten, Mr. Persons, Miss Sahm, Mr. Schneider, Mr. Strieby, Mr. Tileston.

Accredited Schools—Mr. Breitwieser, Mr. Motten.

Advanced Degrees—Mr. Cajori, Mr. Howe, Mr. Mierow, Mr. Persons, Mr. Schneider.

Athletics—Mr. Schneider, Miss Churchill, Miss Davis, Mr. Okey, Mr. Motten, Mr. Rothgeb.

Catalog—Mr. Ellingwood, Miss Brown, Mr. Gerlach, Mr. Noyes.

Chapel Officer—Mr. Albright.

College Lecture Course—Mr. Motten, Mr. Noyes, Mr. Tileston.

Hagerman Hall—Mr. Gerlach, Mr. Motten.

Individual Courses—Mr. Duniway, Mr. Blum, Miss Brown, Mr. Cajori, Miss Churchill, Mr. Motten, Mr. Struthers.

Library—Mr. Ormes, Miss Canon, Mr. Parish, Mr. Persons.

Music—Mr. Hale, Mr. Brown, Mr. Ellingwood, Mrs. Howe, Miss Sahm.

Publications—Mr. Cajori, Mr. Ellingwood, Mr. Howe, Mr. Schneider.

Publicity—Mr. Howe, Mr. Blum.

Schedule—Mr. Albright, Mr. Tileston.

Scholarships—Mr. Duniway, Mr. Cajori, Miss Brown, Miss Churchill, Mr. Persons, Mr. Schneider.

Social Life—Mr. Cajori, Miss Brown, Miss Churchill, Mr. Persons, Mr. Schneider.

Student Activities—Mr. Motten, Miss Churchill, Miss Sahm, Mr. Tileston.

Student Self-Help—Mr. Motten, Mr. Ellingwood, Mr. Gerlach.

Class Officers

<i>Senior</i>	Mr. Cajori
<i>Junior</i>	Mr. Breitwieser
<i>Sophomore</i>	Mr. Schneider
<i>Freshman</i>	Mr. Motten
<i>Special</i>	Mr. Tileston

Admission

REGISTRATION.

Before registering, each candidate must present to the Dean a certificate of moral character, signed by some responsible person in the community in which he has made his home. School authorities are asked to mail credits direct to the Registrar.

Students are required to register promptly and attend the first exercise in their courses. A fee for late registration will be charged as follows: \$1.00 for registration, first half-year, later than noon on Saturday, September 14, 1918, \$1.00 for registration, second half-year, later than noon on Saturday, January 25, 1919.

ENTRANCE REQUIREMENTS.

FOR

COURSES LEADING TO THE DEGREE OF BACHELOR OF ARTS AND THE
DEGREE OF BACHELOR OF ARTS IN BUSINESS AD-
MINISTRATION AND BANKING.

1. ENGLISH, 3 units.*
2. HISTORY, 1 unit.
3. MATHEMATICS, 2 units (preferably 3).
4. LATIN, FRENCH, GERMAN or SPANISH, 4 units, of which 2 must be Latin.†
5. SCIENCE, 2 units (to be selected from the list of sciences given below in 6; but the student is advised to offer Chemistry and Physics. If the student offers Greek, only one unit of science is required).
6. ELECTIVES, sufficient to make a total of 15 units.
English, 1 unit.
Greek, 1, 2 or 3 units.
German, 1 or 2 units.

*A unit is a course covering a school year of not less than 35 weeks, with 4 or 5 periods of at least 40 minutes each a week. Only one unit of deficiency is allowed for entrance.

†If a student has not taken preparatory Latin, but brings 15 other units of acceptable work, he will be allowed to begin Latin in college, the work counting toward his degree. Only the first two years of preparatory Latin are offered.

French, 1 or 2 units.
 Spanish, 1 or 2 units.
 Mathematics, 1 unit.
 History, 1 or 2 units.
 Civil Government, $\frac{1}{2}$ unit.
 Chemistry, 1 unit.
 Physics, 1 unit.
 Physiology, $\frac{1}{2}$ unit.
 Zoology, $\frac{1}{2}$ unit.
 Botany, $\frac{1}{2}$ unit.
 Physiography, $\frac{1}{2}$ unit.
 Geology, $\frac{1}{2}$ unit.
 Mechanical Drawing, 1 unit.

ENTRANCE REQUIREMENTS FOR

COURSES LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN
ENGINEERING AND THE DEGREE OF FOREST ENGINEER.
(15 UNITS.)

The requirements for admission to the engineering courses are as follows:

1. MATHEMATICS (3 units)—(a.) Algebra thru simultaneous quadratic equations; (b.) Elementary Plane Geometry; (c.) Solid and Spherical Geometry; (d.) Review Algebra, Ratio and Proportion, Binomial Theorem, Arithmetical and Geometrical Progressions, Elements of Permutations and Combinations. Plane Trigonometry is desirable but not necessary. A thoro preparation is of great importance.
2. PHYSICS (1 unit)—One year's course. See p. 29.
3. CHEMISTRY (1 unit)—One year's course. See p. 29.
4. ENGLISH (3 units)—As in the College of Arts. See p. 25.
5. FOREIGN LANGUAGES (2 units)—Two years. See pp. 27-29.
6. AMERICAN, AND ENGLISH OR ANCIENT HISTORY (1 unit)—One year's course in each. See p. 27.
7. ELECTIVES (4 units)—Preferably in modern languages and history. See pp. 27-29.

Students who have had a high school course in trigonometry

may receive advanced standing in this subject in the Department of Engineering by passing an examination at the beginning of the college year.

UNIT COURSES IN PARTICULAR SUBJECTS.

1. ENGLISH—(3 units).

- (a) A practical knowledge of grammar and the elements of rhetoric.
- (b) A careful study of the following works, recommended by the Conference on Uniform Entrance Requirements in English, from the point of view of explanation of allusions, meanings of unusual words, acquaintance with the periods of literary history represented, etc., as well as that of subject matter, structure, and literary quality.

Shakespeare's *Macbeth*; Milton's *Comus*, *L'Allegro*, and *Il Penseroso*; Burke's *Speech on Conciliation with America*, or Washington's *Farewell Address* and Webster's *First Bunker Hill Oration*; Macaulay's *Life of Johnson*, or Carlyle's *Essay on Burns*.

- (c) A less minute study of the following works, sufficient to give the candidate a clear idea of their important parts:

READING.—Group I. (Two to be selected): *The Old Testament*, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther; Homer's *Odyssey*, with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII; Homer's *Iliad*, with the omission, if desired, of books XI, XIII, XIV, XV, XVII, XXI; Vergil's *Aeneid*. The *Odyssey*, *Iliad*, and *Aeneid* should be read in English translations of recognized literary excellence. *For any unit of this group a unit from any other group may be substituted.*

Group II. (Two to be selected): Shakespeare's *Merchant of Venice*, *Midsummer Night's Dream*, *As You Like It*, *Twelfth Night*, *Henry the Fifth*, *Julius Caesar*.

Group III. (Two to be selected): Defoe's *Robinson Crusoe*, Part I; Goldsmith's *Vicar of Wakefield*;

Scott's *Ivanhoe*, or *Quentin Durward*; Hawthorne's *The House of the Seven Gables*; Dickens's *David Copperfield*, or *Tale of Two Cities*; Thackeray's *Henry Esmond*; Mrs. Gaskell's *Cranford*; George Eliot's *Silas Marner*; Stevenson's *Treasure Island*.

Group IV. (Two to be selected): Bunyan's *Pilgrim's Progress*, Part I; The *Sir Roger de Coverly Papers* in the *Spectator*; Franklin's *Autobiography*, (condensed); Irving's *Sketch Book*; Macaulay's *Essay on Lord Clive*, and *Essay on Warren Hastings*; Thackeray's *English Humourists*; *Selections from Lincoln*, including at least the two *Inaugurals*, and the *Speeches in Independence Hall* and at *Gettysburg*, *Last Public Address*, *Letter to Horace Greeley*, together with a brief memoir or estimate; Parkman's *Oregon Trail*; Thoreau's *Walden*, or Huxley's *Autobiography*, and *Selections from Lay Sermons*, including the address on *Improving Natural Knowledge*, *A Liberal Education*, and *A Piece of Chalk*; Stevenson's *Inland Voyage*, and *Travels With a Donkey*.

Group V. (Two to be selected): Palgrave's *Golden Treasury* (First Series) Books II and III, with especial attention to Dryden, Collins, Gray, Cowper, and Burns; Gray's *Elegy in a Country Churchyard*, and *Goldsmith's Deserted Village*; Coleridge's *Ancient Mariner*, and Lowell's *Vision of Sir Launfal*; Scott's *Lady of the Lake*; Byron's *Childe Harold*, Canto IV, and *The Prisoner of Chillon*; Palgrave's *Golden Treasury* (First Series) Book IV, with especial attention to Wordsworth, Keats, and Shelley; Poe's *Raven*; Longfellow's *Courtship of Miles Standish*, and Whittier's *Snow Bound*; Macaulay's *Lays of Ancient Rome*, and Arnold's *Sohrab and Rustum*; Tennyson's *Gareth and Lynnette*, *Lancelot and Elaine*, and *The Passing of Arthur*; Browning's *Cavalier Tunes*, *The Last Leader*, *How They Brought the Good News from Ghent to Aix*, *Home Thoughts from Abroad*, *Home Thoughts from the Sea*, *Incident of the French Camp*, *Hervé Riel*, *Pheidippides*,

My Last Duchess, and Up at a Villa—Down in the City.

Altho the books mentioned above are recommended as preparation for this part of the requirement, they are not prescribed. Books of equal merit, covering a similar range of literary types, will be accepted as equivalents.

2. HISTORY—(1 unit.) An outline knowledge of the leading facts of either Ancient, Greek and Roman, Mediaeval and Modern, American, or English History.

(a) Ancient History: Myers and Botsford, Myers, West, or an equivalent.

(b) Greek and Roman: Botsford, Allen, or an equivalent.

(c) Mediaeval and Modern: Myers, or an equivalent.

(d) American: Channing, McLaughlin, Thomas, Johnston, or an equivalent.

(e) English: Larned, Coman and Kendall, or an equivalent.

3. MATHEMATICS—(2 or 3 units.)

(c) Algebra, thru simultaneous quadratic equations ($1\frac{1}{2}$ units).

(b) Elementary Plane Geometry; the first five books of Phillips and Fisher's, Wells's, or Wentworth's *Geometry*, or an equivalent (1 unit).

(c) Solid and Spherical Geometry ($\frac{1}{2}$ unit).

(d) Plane Trigonometry ($\frac{1}{2}$ unit).

It is recommended that Algebra and Plane Geometry be reviewed in the last year of the preparatory course.

4. LATIN—

(a) An accurate and ready knowledge of grammatical forms. *Caesar's Gallic Wars*, Bks. I-IV., or an equivalent. Prose Composition based on Caesar. Careful attention should be given from the beginning to correct pronuciation of the Latin and to the use of idiomatic English in translation. (2 units.)

(b) Cicero: Seven orations. The following are recommended: The four orations against Catiline, Archias, the Manilian Law, Marcellus. Translation at sight

of easy passages of prose. Prose Composition. (1 unit.)

- (c) Vergil: *Aeneid*, Bks. I.-VI. Prose Composition based on Cicero. (1 unit.)

5. GREEK—

- (a) White's First Greek Book, or an equivalent. Xenophon's *Anabasis* (20 or 30 pages). Practice in sight translation. The rules of accentuation. (1 unit.)
- (b) Four books of the *Anabasis*. Reading at sight. Prose Composition based on the *Anabasis*. Careful grammatical study. (1 unit.)
- (c) Three books of the *Iliad* with prosody and dialectic forms. Sight translation. Prose Composition. (1 unit.)

6. GERMAN, FRENCH, AND SPANISH—(1 or 2 units).

- (a) The work of the first year should comprise: (1) Drill in the rudiments of grammar; (2) careful drill in pronunciation; (3) the memorizing and frequent repetition of easy colloquial sentences; (4) abundant easy exercises; (5) the reading in graduated texts of from 75 to 100 pages of German, or from 100 to 175 pages of French or Spanish prose.
- (b) The work of the second year should comprise: (1) The careful reading of from 150 to 200 pages of German literature, or from 250 to 400 pages of French or Spanish literature, in the form of easy stories or historical or biographical sketches; (2) practice in the translation, from English, of easy variations from the matter read, and also in free reproduction, sometimes orally and sometimes in writing, of the substance of short and easy selected passages; (3) continued drill in the rudiments of grammar.

Good texts for the second year, arranged in suitable order for reading, would be:

GERMAN: Andersen, *Märchen*; Leander, *Träumereien*; Hauff, *Das kalte Herz*; Hillern, *Höher als die Kirche*; Storm, *Immensee*; Baumbach, *Der*

Schwiegersohn; Heyse, *L'Arrabiata*, *Das Mädchen von Treppi*; Gerstäcker, *Germelshausen*. Texts edited for instruction by the direct method are recommended, especially those of the *Walter-Krause* series.

FRENCH: (1) Mairé, *la Tâche du petit Pierre*; Malot, *Sans famille*, or Bruno, *le Tour de la France*; (2) Labiche et Martin, *le Voyage de M. Perrichon*; Halévy, *l'Abbé Constantin*, or Mérimée, *Colomba*; (3) Dumas, *la Tulipe noire*, or Erckmann-Chatrian, *Madame Thérèse*; (4) Sarcey, *le Siège de Paris*, or Lamartine, *Jeanne d'Arc*; (5) Daudet, *Contes*, or George Sand, *la Mare au diable*.

SPANISH: (1) Valera, *El pájaro verde*, and Alarcón *El Capitán Veneno*, or about 150 pages of selected short stories; (2) Pérez Galdós, *Doña Perfecta* or *Marianela*; (3) Echegaray, *Ó locura ó santidad*, Ramos y Vidal, *Zaragüeta*, or Moratin, *El sí de las niñas*.

A third and a fourth year of German or French will be accepted as an elective entrance subject, if the work has been done satisfactorily. Candidates are advised to present two units of German, French, or Spanish, as preparatory to admission to the German 2, French 2, or Spanish 2, given in the college.

7. PHYSICS—(1 unit). Not less than two hours a week of recitation and four of laboratory work; Millikan and Gale's *First Course in Physics*; Carhart and Chute's *Elements of Physics*, or an equivalent.
8. CHEMISTRY—(1 unit). Williams's *Elements of Chemistry*, or an equivalent.
9. PHYSIOLOGY—($\frac{1}{2}$ unit). Text book work should cover such a text as Blaisdell's *Practical Physiology*. In addition, the course should include a rough dissection, by the teacher of the frog and cat, and a microscopic examination of the more important tissues.
10. ZOOLOGY—($\frac{1}{2}$ unit). Textbook work equal in amount to that contained in Kellogg, Jordan, or Davenport;

laboratory work on the structure of at least ten forms and a comparison with other types. The drawings and descriptions in the candidate's laboratory notebook must be certified by the teacher.

11. BOTANY—($\frac{1}{2}$ unit). A knowledge of the structure and more important physiological processes of flowering plants, of the modifications of parts for special functions, of the plant societies, of pollination and dissemination. It is also desirable that the candidate have the ability to identify ordinary seed plants. A laboratory notebook certified by the teacher must be presented by the candidate. Such texts as Bergen's *Foundation of Botany* and Coulter's *Plant Studies* are recommended.
12. PHYSIOGRAPHY—($\frac{1}{2}$ unit). Tarr, Davis, Dryer, or an equivalent.
13. GEOLOGY—($\frac{1}{2}$ unit). Scott's *Introduction to Geology*, or an equivalent, with practice in the determination of the commoner rocks, igneous, sedimentary, and metamorphic.
14. MECHANICAL DRAWING—(1 unit).

ADMISSION BY CERTIFICATE.

Candidates who offer satisfactory evidence of having completed a preparatory course equivalent to the above requirements will be admitted without condition into the Freshman Class. Each candidate must bring from the principal of the school last attended a personal statement as to his grade of scholarship.

ACCREDITED SCHOOLS.

The following schools are on the accredited list. A certificate of the satisfactory completion, in any of them, of any study required for admission to the College, will be accepted:

Alamosa High School.
 Arvada High School.
 Aspen High School.
 Cañon City High School.

Cañon City So. Side H. S.
 Central City High School.
 Cheyenne County High School.
 Cheyenne (Wyo.) High School

Colorado City High School.	Las Vegas (N.M.) High School.
Colorado Springs High School.	Leadville High School.
Cripple Creek High School.	Littleton High School.
Del Norte High School.	Longmont High School.
Delta High School.	Loveland High School.
East Denver High School.	Manitou High School.
North Denver High School.	Manzanola High School.
West Denver High School.	Monte Vista High School.
South Denver High School.	Montrose High School.
Denver Manual Train. H. S.	Ogden, Utah, High School.
Douglas Co. H. S., Castle Rock	Ordway High School.
Durango High School.	Ouray High School.
Eaton High School.	Palisades High School.
Florence High School.	Paonia High School.
Fort Collins High School.	Pueblo High School, Dist. No. 1.
Fort Morgan High School.	Pueblo High School, Dist. No.20
Fountain High School.	Rocky Ford High School.
Fowler High School.	Rowland Hall, Salt Lake City.
Fruita High School.	Saguache Co. High School.
Georgetown High School.	Salida High School.
Glenwood Springs High School.	Salt Lake City High School.
Golden High School.	State Teachers' College H. S.
Grand Junction High School.	Sterling High School.
Greeley High School.	St. Stephen's Academy.
Gunnison High School.	Telluride High School.
Holly High School.	Trinidad High School.
Holyoke High School.	Victor High School.
Idaho Springs High School.	Walsenburg High School.
Lafayette High School.	Wheat Ridge H. S., Alcott.
La Junta High School.	Miss Wolcott's School, Denver.
Lamar High School.	Windsor High School.

Certificates from schools not on the accredited list will be considered as the merits of each case may warrant.

ADMISSION TO ADVANCED STANDING.

Students who offer satisfactory evidence of having completed studies equivalent to those offered by the College will be received into advanced classes. The Faculty usually receive cer-

tificates from other colleges, but reserve the right to examine any candidate. All credits should be mailed to the Registrar.

SPECIAL STUDENTS.

Special students will be received, at the discretion of the Faculty, into such classes as they are qualified to enter. It is the rule of the College that such students must attend the examinations as well as the ordinary recitations of their classes, subject to the same conditions as other students.

Several of the courses of lectures which form part of the College instruction, are open to the public on payment of a fee of \$5.00 for each half-year course (see p. 134), and without any requirements of examination.

REQUIREMENTS FOR DEGREES

GENERAL RULES.

The credit unit in all courses is one hour a week for a half-year. In courses continuing thruout the year, no credit is given for a half-year's work except by vote of the committee on individual courses and with the approval of the head of the department concerned. To be accredited as passing work, a course must be graded at least 60%. No student will be allowed to take a degree from Colorado College who has not been a resident in the institution for at least one full year. No credit is allowed for work done out of course or in absentia, except with the permission of the committee on individual courses; such permission must be obtained in advance. •

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS.

In the Department of Arts and Sciences, only one degree is given, that of Bachelor of Arts. To secure this the student is required to complete a course of study consisting of (1) certain prescribed studies, (2) a specified number of hours in a major subject, (3) enough free electives to bring his work up to the total requirement of 120 hours of scholastic work, making an average of 15 hours a week thruout the four years.* In addition he is further required to complete 6 hours' work in Physical Education (pp. 96-98). To satisfy the requirements for the degree of Bachelor of Arts, a student must obtain a grade above 69% in at least one-half the hours taken in Colorado College. It is recommended that students who are planning to work their way, in large part, thru College, take five years for their course.

I. REQUIRED SUBJECTS.

Economics, History or Political Science.—Six hours in one of these subjects should be completed by the end of the Junior year.

English.—English 1; Freshman year, 3 hours. English 2; first half of Sophomore year, 3 hours. A literature course to

*Except in the course leading to the degree of Bachelor of Arts in Business Administration and Banking (see p. 36).

be selected from English 4, 5, 9, 12, 13, 16, 17 and 19; second half of Sophomore year, 3 hours.

Foreign Languages.—Twelve hours in foreign languages should be completed by the end of the Sophomore year.

Mathematics.—Mathematics 1; first half, Freshman year, 3 hours. Mathematics 2 and 3; second half, Freshman year, 5 hours. Students offering Solid Geometry for admission are not required to take Mathematics 2.

Philosophy.—Philosophy 1, or Philosophy 2 and 3; 6 hours.

Physical Education.—Freshman year, 3 hours a week, credit 1 hour each half-year. Sophomore and Junior years, 2 hours a week, credit 1 hour each half-year.

Science.—Six hours in either Biology, Chemistry, or Physics should be completed by the end of the Sophomore year.

II. REQUIREMENTS ARRANGED BY YEARS.

FRESHMAN YEAR.

<i>First Half-Year.</i>	Credit Hours	<i>Second Half-Year.</i>	Credit Hours
English 1, p. 77.....	3	English 1, p. 77.....	3
Foreign Language (see above)	3	Foreign Language	3
Mathematics 1, p. 93.....	3	Mathematics 2 and 3, or 3 (see above) p. 93.....	5 or 3
Physical Education, p. 96....	1	Physical Education, p. 96....	1
Science (see above).....	3	Science	3
Elective	3	Elective	1 or 3
	<hr/> 16		<hr/> 16

SOPHOMORE YEAR.

<i>First Half-Year.</i>	Credit Hours	<i>Second Half-Year.</i>	Credit Hours
Economics, History or Political Science, see above) ..	3	Economics, History or Political Science	3
English 2; p. 77.....	3	English, a literature course (see above)	3
Foreign Language (if requirement is not completed in the Freshman year)	3	Foreign Language	3
Physical Education, p. 96....	1	Physical Education, p. 96....	1
Science (if not taken in the Freshman year)	3	Science	3
Elective	3	Elective	3
	<hr/> 16		<hr/> 16

JUNIOR YEAR.

<i>First Half-Year.</i>	Credit Hours	<i>Second Half-Year.</i>	Credit Hours
Economics, History or Political Science (if not completed in the Sophomore year) ..	3	Economics, History or Political Science	3
Philosophy 1, or Philosophy 2, p. 94.....	3	Philosophy 1, or Philosophy 3, p. 94.....	3
Physical Education, p. 96....	1	Physical Education, p. 96....	1
Electives ..	9	Electives ..	9
	<hr/>		<hr/>
	16		16

SENIOR YEAR.

<i>First Half-Year.</i>	Credit Hours	<i>Second Half-Year.</i>	Credit Hours
Philosophy 1, or Philosophy 2 (if not completed in the Junior year) p. 94.....	4	Philosophy 1, or philosophy 3, p. 94.....	4
Electives ..	11	Electives ..	11
	<hr/>		<hr/>
	15		15

MAJOR SUBJECT.

In addition to the above prescribed subjects, each student shall select a major subject, if possible before the end of the Sophomore year, and, in any case, not later than the beginning of the Junior year. The professor in charge of the major subject will act as the student's adviser, and will have authority, with the Dean, to require the completion of work amounting to 30 hours in the major subject, or in the major subject and in such minor subjects as he shall consider necessary, or in collateral work. Mention of the major subject will be made in the diploma. No work done in Colorado College will be counted toward the completion of a major subject if the grade is below C (70).

Any one of the following may be selected by the student as his major subject: (1) Art; (2) Art and Music;* (3) Astronomy; (4) Bible and Religion; (5) Biology; (6) Chemistry; (7) Economics; (8) Education; (9) English; (10) Geology; (11) German; (12) Greek; (13) History; (14) Latin; (15) Mathe-

*See p. 112.

matics; (16) Philosophy; (17) Physics; (18) Political Science; (19) Romance Languages.

All courses except English 1, French 1, German 1, Mathematics 2, and Spanish 1, may be counted as part of the requisite 30 hours.

Petitions to change the major subject will be granted only when approved by the professors in charge of both the old and the new subjects; and the student will be held to all the requirements of the new major subject. In no case may the major subject be changed later than the beginning of the Senior year.

ELECTIVES.

The student shall elect, in addition to the prescribed subjects and the major subject, a sufficient number of courses to bring the total amount of his College work up to 120 hours (except in Business Administration; see p. 36).

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS IN BUSINESS ADMINISTRATION AND BANKING.

The four years' course leading to the degree of Bachelor of Arts in Business Administration and Banking is designed to offer a thoro training in those branches of knowledge fundamental to business, using that term in its broadest sense. It is the aim of the Judson M. Bemis Department of Business Administration and Banking to emphasize those fundamental facts and principles of business which are necessary to its administration but which are difficult or impossible to acquire in the ordinary routine of work in a complex business organization. The aim is, not to train students in business routine, but to instruct them so that when they enter business they will understand the significance of the work that they happen to be doing in its relation to the whole. A training in economics, finance, law, accounting, insurance, advertising and the like, familiarity with business terms, the reading of commercial journals, and the daily discussion of banking and industrial topics will enable the student to make the transition from college to business more readily than he otherwise could.

The requirements for the degree of Bachelor of Arts in Business Administration and Banking are the same as those for the regular degree of Bachelor of Arts (including the require-

ments for Physical Education, p. 96) except as follows: Business 12 is required in the Freshman year instead of Mathematics 3; Economics 1 is required in the Sophomore year in addition to the other requirements (see p. 38); and 68 half-year hours are required in the Junior and Senior years, of which 55 half-year hours are prescribed. For the degree from the Department a standing of C or more is required in thirty hours of the required work in Economics, Political Science, and Business included in which must be Business 1 and 5 and either Business 6 or Business 9 and 10.

In planning the course certain considerations have been kept in mind, i. e., to prevent over-specialization by broad requirements in the Freshman and Sophomore years; to develop a professional spirit among the Juniors and Seniors by requiring greater specialization than obtains under the system of major studies; to secure the elasticity necessary because of the diverse needs of the students by means of options and free electives. Thus, a student planning to enter journalism should elect courses in English, history, and political science; one intending to enter the consular service should elect modern languages, political science, and law; for banking he should elect Economics 10, Business 9 and 10; for actuarial and statistical work he should elect mathematics and Economics 19; for mercantile and manufacturing pursuits he should elect Business 6. Other combinations will suggest themselves to those preparing for chamber of commerce secretaryships, teaching of commercial branches in high schools, etc.

FRESHMAN YEAR.

<i>First Half-Year.</i>	Credit Hours	<i>Second Half-Year.</i>	Credit Hours
English 1, p. 77.....	3	Business 12 and Mathemat-	
Mathematics 1, p. 93.....	3	ics 2, pp. 57 and 93....	5 or 3
Modern Language	3	English 1, p. 77.....	3
Physical Education, p. 96....	1	Modern Language	3
Science ..	3	Physical Education, p. 96....	1
Elective ..	3	Science ..	3
	—	Elective ..	3
	16		—
			16

SOPHOMORE YEAR.

<i>First Half-Year.</i>	Credit Hours	<i>Second Half-Year.</i>	Credit Hours
Economics 1, p. 69.....	3	Economics 1, p. 69.....	3
English 2, p. 77.....	3	English ..	3
Modern Language	3	Modern Language	3
Physical Education, p. 96....	1	Physical Education, p. 96....	1
Electives ..	6	Electives ..	6
	<hr/> 16		<hr/> 16

JUNIOR YEAR.

<i>First Half-Year.</i>	Credit Hours	<i>Second Half-Year.</i>	Credit Hours
Accounting (Bus. 1) p. 58....	3	Accounting (Bus. 1) p.58....	3
Commercial Development (Econ. 21) p. 69.....	3	Commerce and Industries (Bus. 3) p.59.....	3
Commercial Law (Bus. 5) p. 59.....	3	Commercial Law (Bus. 5) p.59.....	3
Elements of Political Sci- ence (Pol. Sci. 1) p.100....	3	Money and Banking (Econ. 9) p.70.....	3
Physical Education, p. 96....	1	Physical Education, p. 96....	1
Transportation (Bus. 7) p. 59	3	Public Finance (Econ. 10) p. 70	3
or		or	
Insurance (Econ. 19)p.71....	3	Labor (Econ. 22) p. 71.....	3
Elective ..	2	Elective ..	2
	<hr/> 18		<hr/> 18

SENIOR YEAR.

<i>First Half-Year.</i>	Credit Hours	<i>Second Half-Year.</i>	Credit Hours
Relation of Legislation to Economics (Bus. 15) p.60	2	Advanced Accounting (Bus. 14) p. 58.....	2
Business Organization (Bus. 6) p. 59.....	3	Investment and Speculation (Bus. 10) p. 60.....	3
or		Commercial Law (Bus. 13) p. 59.....	2
Banking Practice (Bus. 9) p. 60	3	Corporation Finance (Bus. 4) p. 58.....	3
Commercial Law (Bus. 13) p. 59	2	Ethics (Phil. 3) p. 95.....	3
History of Philosophy (Phil. 2) p. 95.....	3	Elective ..	3
Statistics (Econ. 18) p. 70..	3		<hr/> 16
Elective ..	3		
	<hr/> 16		

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE
IN CIVIL AND IRRIGATION ENGINEERING.

CIVIL ENGINEERING.

The four years' course leading to the degree of Bachelor of Science in Civil Engineering is designed to afford a thoro analytical training as well as numerous and extended practical exercises in those matters that pertain to the profession of the civil engineer, including all kinds of structures and public works, and also the various developments and applications of power by the use of electric, steam, water, and air motors.

The theoretical portion of the instruction is based largely upon the courses given in the departments of mathematics and physics, and the results obtained are applied to practical engineering work. Special stress is laid upon the design by the student of the various structures and machines which the civil engineer is called upon to construct in the practice of his profession.

The instruction is given by lectures, demonstrations by the student, and frequent conferences, co-ordinate with which the work of design is carried on. It covers comprehensively the subjects of surveying, water supply of cities and towns, irrigation, sanitary engineering, including sewage disposal, graphic and analytic treatment of all metallic structures, foundations, retaining and reservoir walls, high masonry dams, sewer systems, hydraulic engineering, rivers and harbors, hydraulic, steam, and electric motors.*

FRESHMAN YEAR.

<i>First Half-Year.</i>	Credit Hours	<i>Second Half-Year.</i>	Credit Hours
Algebra (Math. 1) p. 93....	4	Descriptive Geometry	
Descriptive Geometry		(Graphics 2) p. 86.....	5
(Graphics 2) p. 86.....	1	Modern Language	3
Mechanical Drawing		Physical Education, p. 96....	1
(Graphics 1) p. 86.....	2	Plane Surveying	
Modern Language	3	(Civil 1) p. 64.....	2
Physical Education, p. 96....	1	Rhetoric and Comp. (Eng.	
Rhetoric and Composition		1) p. 77.....	3
(English 1) p. 77.....	3	Trigonometry	
Woodwork (Shop 1) p.105..	2	(Math. 3) p. 93.....	4

*For ease in reference, associated courses in the departments of Civil Engineering, Irrigation Engineering, and the Summer School of Surveying, as listed on pp. 64-69, are numbered to indicate such association (1, 21, 201, etc.), a group of ten numbers being assigned for each general subdivision.

Summer Course in Surveying (Civil 201), p. 68, four weeks in Manitou Park, credit 4 hours.

SOPHOMORE YEAR.

<i>First Half-Year.</i>	Credit Hours	<i>Second Half-Year.</i>	Credit Hours
Analytical Geom. (Math. 4)		Analytical Geometry	
p. 93	3	(Math. 5) p. 93.....	2
Advanced Chemistry (Chem.		Advanced Chemistry (Chem.	
3) p. 62	3	2) p. 60.....	3
Differential Calculus		Integral Calculus (Math. 6)	
(Math. 6) p. 93.....	3	p. 93	4
Experimental Physics		Gen. Physics (Phys. 4)	
(Phys. 5) p. 99.....	2	p. 99	3
Gen. Physics (Phys. 2)		Experimental Physics	
p. 98	3	(Phys. 6) p. 99.....	1
Machine Design (Graph. 3)		Precision of Measurements	
p. 86	2	(Phys. 8) p. 99.....	1
Modern Language	2	Graphic Statics (Graphics	
		4) p. 87	2
		Modern Language	2

JUNIOR YEAR.

<i>First Half-Year.</i>	Credit Hours	<i>Second Half-Year.</i>	Credit Hours
Advanced Surveying		Resistance of Materials	
(Civil 5) p. 64.....	2	(Civil 81) p. 67.....	2
Geology 1, p. 83.....	3	Power Plants	
Graphics 7	2	(Electrical 15) p. 76.....	2
Hydraulics (Civil 41) p.66..	2	Physical Education, p. 96....	1
Hydraulic Laboratory		Mechanics (Math. 12) p. 93	3
(Civil 42) p. 66.....	2	Railway Engineering	
Masonry (Civil 31) p. 65....	2	(Civil 21) p. 65.....	3
Mechanics (Math. 12) p. 93	3	Stresses (Civil 83) p. 62.....	3
Physical Education, p. 96....	1	Testing Laboratory	
Railway Curves		(Civil 82) p. 68.....	1
(Civil 20) p. 64.....	2	Field Astronomy (Civil 2)	
Resistance of Materials		p. 64	3
(Civil 81) p. 67.....	3		

SENIOR YEAR.

<i>First Half-Year.</i>	Credit Hours	<i>Second Half-Year.</i>	Credit Hours
Bridge Design (Civil 83)		Bridge Design (Civil 84)	
p. 68	3	p. 68	4
Elementary Law (Bus. 5)		Irrigation (Civil 51) p. 67....	3
p. 59	3	Sanitary Engineering	
Electrical Engineering		(Civil 62) p. 67.....	2
(Electrical 14) p. 76.....	3	Roads and Parks (Civil 71)	
Economics (Econ. 1) p. 69..	3	p. 67	2

<i>First Half-Year.</i>	Credit Hours	<i>Second Half-Year.</i>	Credit Hours
Foundations (Civil 33) p.66	2	Electrical Engineering	
Railway Economics (Civil 22) p. 65.....	2	(Electrical 14) p. 76.....	3
Reinforced Concrete (Civil 32) p. 65.....	2	Thesis.	
Water Supply (Civil 61) p. 67	3		
Thesis.			

Inspection Trip.

IRRIGATION ENGINEERING.

In order to meet the demands for men trained in the design, location, and construction of irrigation works, a special course in irrigation engineering is offered. The first year of this course is the same as in the Civil Engineering course; the second, third, and fourth years differ from the regular Civil Engineering Course in the substitution of those subjects that bear more directly upon irrigation problems, such as special work in agricultural chemistry, soil physics, advanced work in hydraulics, and the design of stone, timber, and steel irrigation structures. The full equipment of the Civil Engineering department, including surveying instruments, testing machines, hydraulic laboratory and maps and plans, is available to the students of Irrigation Engineering.

The course differs from that in Civil Engineering in the following respects:

SOPHOMORE YEAR.—Civil 2 and Graphics 4 are omitted and Agricultural Chemistry (Chem. 8) is taken during the year.

JUNIOR YEAR.—During the second half-year, Irrigation (Civil 51) and Geology 1 replace Railway Engineering (Civil 21).

SENIOR YEAR.—During the second half-year, Hydraulic Engineering (Civil 43), and Meteorology take the place of Roads and Parks (Civil 71), and Railway Economics (Civil 22).

[The requirements for admission to courses in Civil and Irrigation Engineering are given on page 24. For description of laboratories, see page 124. For Physical Education, see p. 96.]

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE
IN ELECTRICAL ENGINEERING.

The study of electricity begins in the Sophomore year,

when, in the physics course, the student learns the fundamental phenomena of electricity and magnetism, the quantitative statement in mathematical form of their relations; and performs in the laboratory basic experiments which illustrate these phenomena and impress upon the mind the quantitative relations. In the Junior year the experiments are of a more technical and commercial character. The theory is studied in more detail and with the use of the calculus. Particular attention is given in this year to commercial measuring instruments, and to direct-current machines. A portion of the work is performed in accordance with the "preliminary report system," under which the student, from the general principles imparted in the theoretical courses, writes and receives back corrected, before performing a test, a critical statement of the theory and laboratory method of the test to be performed. In the Junior year are also given most of those courses like steam engineering and hydraulic engineering, without which the training of the electrical engineer would be too narrow for practical purposes. In the Senior year the preliminary report system is followed entirely; and the emphasis is placed upon alternating currents, questions of transmission and distribution, and engineering questions of cost.

A certain amount of reading in history, literature, and popular science is required during each summer vacation in the course.

FRESHMAN YEAR.

<i>First Half-Year.</i>	Credit Hours	<i>Second Half-Year.</i>	Credit Hours
Algebra (Math. 1) p. 93.....	4	Descriptive Geometry	
Drawing (Graphics 1) p. 86	2	(Graphics 2) p. 86.....	5
Descriptive Geometry		Forging (Shop 3) p. 105.....	1
(Graphics 2) p. 86.....	1	Modern Language	3
Modern Language	3	Pattern-Making (Shop 2)	
Physical Education, p. 96....	1	p. 105	1
Rhetoric and Composition		Physical Education, p. 96....	1
(English 1) p. 77.....	3	Rhetoric and Composition	
Woodwork (Shop 1) p. 105..	2	(English 1) p. 77.....	3
		Trigonometry	
		(Math. 3) p. 93	4

SOPHOMORE YEAR.

<i>First Half-Year.</i>	Credit Hours	<i>Second Half-Year.</i>	Credit Hours
Advanced Chemistry (Chem. 2) p. 60.....	3	Advanced Chemistry (Chem. 2) p. 60.....	3
Analytical Geometry (Math. 4) p. 93.....	3	Analytical Geometry (Math. 5) p. 93.....	2
Differential Calculus (Math. 6) p. 93.....	3	Experimental Physics (Phys. 6) p. 99.....	2
Experimental Physics (Phys. 5) p. 99.....	2	General Physics (Phys. 4) p. 99.....	3
General Physics (Phys. 3) p. 99.....	3	Integral Calculus (Math. 6) p. 93.....	4
Machine Design (Graphics 3) p. 86.....	2	Mechanism (Graphics 5) p. 87	2
Modern Language	2	Machine Shop (Shop 4) p. 105.....	1
		Modern Language	2
		Precision of Measurements (Phys. 8) p. 99.....	1

JUNIOR YEAR.

<i>First Half-Year.</i>	Credit Hours	<i>Second Half-Year.</i>	Credit Hours
Advanced Electrical Lab. (Electrical 3) p. 74.....	2	Alternating-Current Theory (Electrical 2) p. 73.....	3
Elements of Elect. Eng. (Electrical 1) p. 73.....	4	Direct Current Elect. Eng. Lab. (Electrical 8) p.74....	3
Economics (Econ. 1) p. 69..	3	Electrical Measuring Instru- ments (Electrical 6)p.74..	1
Hydraulics (Civil 41) p. 66	2	Machine Work (Shop 5) p. 105	1
Mechanics (Math. 12) p. 93	3	Mechanics (Math. 12) p. 93	3
Physical Education, p. 96....	1	Physical Education, p. 96....	1
Resistance of Materials (Civil 81) p. 67.....	3	Power Plants (Electrical 15) p. 76.....	2
Thermodynamics (Electrical 16) p. 76.....	2	Resistance of Materials (Civil 81) p. 67.....	2
		Surveying (Civil 7) p. 64....	1
		Testing Laboratory (Civil 82) p. 68.....	1

SENIOR YEAR.

First Half-Year.

Alternating-Current Machinery (Electrical 5)	
p. 74	3
Alternating-Current Elect. Eng. Lab. (Electrical 11)	
p. 75	3
Alternating-Current Instruments (Electrical 7)	p. 74 1
Alternating-Current Measurement (Electrical 4)	
p. 74	1
Dynamo Design (Electrical 12)	p. 75..... 1
Electrical Distribution (Electrical 9)	p. 75..... 2
Electrical References (Electrical 13)	p. 76..... 1
Elementary Law (Bus. 5)	p. 59..... 3

Second Half-Year.

Alternating-Current Machinery (Electrical 5)	
p. 74	3
Alternating-Current Elect. Eng. Lab. (Electrical 11)	
p. 75	2
Electrical Engineering (Electrical 10)	p. 75..... 2
Electrical References (Electrical 13)	p. 76..... 1
Engineering Inspections (Electrical 17)	p. 76..... 1
Hydraulic Engineering (Civil 43)	p. 66..... 2
Thesis.	

REQUIREMENTS FOR THE DEGREE OF FOREST ENGINEER*

The Department of Forestry was established in the spring of 1905. The foundation was laid thru the generosity of General Palmer and Dr. Bell, who presented the College a tract of 10,000 acres of land called Manitou Park. Of this, 3,200 acres of agricultural land have been sold, the proceeds being applied toward an endowment for the Department. The remainder of the tract, now known as the Manitou Forest, is timbered and is used for field instruction.

The aim of the Department is to give to students who intend to adopt Forestry as a profession a thoro training which will fit them for positions in the Government Forest Service, or as State Foresters, teachers of Forestry, or expert Foresters in private employ.

The location of the College in the National Forest region enables the Department of Forestry to fit its students particularly for administrative work in the Forest Service. The De-

*The requirements for Physical Education are the same as in the Department of Arts and Sciences, p. 33.

partment is excellently prepared to give the necessary instruction concerning the relations of the Forest Service with the grazing business, the mining business, and other enterprises characteristic of the West. Its location in the National Forest region makes it possible to secure the frequent aid of Forest Service officers for lectures or instruction.

Students who have completed two years of College work (60 half-year hours), in which the following courses, or their equivalents, have been included, will be admitted to instruction in the Department of Forestry as candidates for the degree of Forest Engineer: Biology 1, 3, and either 2 or 4 (p. 52); Chemistry 1 or 2, (p. 60); Civil 1 and 201, (p. 64); Civil 2, (p. 64); Civil 5 and 211 (p. 64); English 1 (p. 77); Geology 1 (p. 83); Graphics 6 (p. 87); Mathematics 1, 2, 3 (p. 93); (High school credit for Mathematics 2 is acceptable); modern language (2 years); Physics 1 and 2, or 3 and 4 (pp. 98-99). Students who studied one or more than one modern language in preparatory school are advised to continue the study of that language in which they are most advanced. Further, the courses in Economics, Mineralogy, Meteorology, and Physics are commended as elective courses which will materially strengthen the student's Forestry Course.

The course in Forestry covers two years, and from the beginning of the college year until December 1 is conducted in the Manitou Forest near Woodland Park, Colorado; from December 1 until the spring vacation in Colorado Springs; and from the spring vacation until June 1 in the Manitou Forest. In the Senior year the work of the spring term may be conducted elsewhere.

JUNIOR YEAR.

<i>Fall Term, Manitou Forest.</i>	Half-Year Hours
Forest Mensuration (see Forestry 1, page 80), first half of term	10
<i>Winter Term—Colorado Springs.</i>	
Dendrology, (see Forestry 2, page 80); lectures or reci- tations 5 hours a week and 6 hours of laboratory work..	5

Wood Technology, (see Forestry 3, page 81); lectures 2 hours a week and laboratory 4 hours.....	2
Silviculture, (see Forestry 4, page 81); lectures 3 hours a week and silvical field studies.....	3
Forest Protection, (see Forestry 5, page 81); lectures 3 hours a week	2
Physical Education, p. 96	1
<i>Spring Term—Manitou Forest and Monument Nursery.</i>	
Silvicultural Operations (see Forestry 6, page 81).....	10

SENIOR YEAR.

<i>Fall Term—Manitou Forest.</i>	Half-Year Hours
Forest Management, (see Forestry 8, page 82); lectures 5 hours a week and daily field or office work.....	8
Forest Improvement Work (see Forestry 7, page 82).....	2
<i>Winter Term—Colorado Springs.</i>	
Forest Utilization, (see Forestry 9, page 82); lectures and recitation 5 hours a week	4
Forest Geography, (see Forestry 10, page 82); lectures or recitations 5 hours a week.....	4
Forestry Policy, (see Forestry 11, p. 83); lectures or recitations 3 hours a week.....	2
<i>Spring Term.</i>	
Lumbering Operations, (see Forestry 12, page 83).....	10

Advanced Degrees

Permission to do graduate work in Colorado College does not necessarily imply admission to candidacy for the Master's degree. A graduate student who wishes to become a candidate for the degree must make application to the Committee on Advanced Degrees under whose supervision his work will be carried on. He is urged to make application at an early date, in order that the Committee may have time to pass on his qualifications for admission. The program of study for the degree and the subject of the dissertation must also be submitted to the committee for approval.

DEGREE OF MASTER OF ARTS.

The Master's Degree is conferred subject to the following conditions:

(1) The applicant must have received the Bachelor's degree from some reputable college or university, and must have a reading knowledge of French or German,—preferably both.

(2) The applicant must pursue in residence a minimum course of nine hours of advanced work a week for one year. The work shall include both a major and a minor subject, and at least five hours a week shall be taken in the major subject. In addition, the applicant must present a dissertation that embodies the result of a careful investigation, such dissertation to represent the equivalent of at least three hours of lectures a week for one year. The dissertation must be approved by the heads of the departments in which the major and minor subjects are taken and by a third professor, before the applicant is permitted to present himself for the final examinations. The dissertation must be handed in not later than May 15, typewritten on pages 8½ by 11 inches, and a copy deposited with the College librarian.

(3) The final examination shall be oral and public, and it shall be in the presence of the professors in charge of the major and minor subjects and of a third professor. In the examination the applicant must give evidence not only that he has done satisfactorily the minimum requirements, as stated above, but also that he has a satisfactory knowledge of the general fields within which the major and minor subjects lie.

The fees are \$80 a year for tuition, \$5 for the diploma, and \$1 to bind the thesis.

Applications for the Master's Degree should be sent to the Chairman of the Faculty Committee on Advanced Degrees, who will furnish information about courses.

DEGREES OF CIVIL ENGINEER AND ELECTRICAL ENGINEER.

The degree of Civil Engineer (C.E.) and Electrical Engineer (E.E.) will be granted to graduates of Colorado College under the following conditions:

(1) The candidate must have the degree of Bachelor of Science in the course in which he seeks the professional degree.

(2) He must have been in practical work at least three years since receiving his Bachelor of Science degree.

(3) He must be registered and engaged in study under direction two years before he presents himself for his degree.

(4) The assigned work done must be equivalent, in the judgment of the department in which he seeks his professional degree, to fifteen half-year hours.

(5) A thesis upon an approved subject and the record of the candidate's professional experience must be submitted one month before the candidate appears for a degree.

(6) The candidate must appear before a Committee from the Engineering Faculty for an oral examination.

(7) The candidate will be judged by his thesis work and his general engineering knowledge and professional record.

The fees are \$25 each year and \$5 for a diploma.

THE HARVARD EXCHANGE.

An arrangement with Harvard University is in operation, by which that institution, each year, sends a professor for a half-year to five Western college: Beloit, Carleton, Colorado College, Grinnell, Knox, dividing the time equally among them; and each of them, in return, sends a member of its faculty to Harvard for a half-year, one-third of his time to be given to instruction, and the remainder to graduate or research work.

The seventh Harvard professor to offer work according to this plan, at Colorado College, is

WILLIAM HENRY SCHOFIELD, PH. D.

Professor of Comparative Literature.

PROFESSOR EDWARD IDELL TERRY, S. B., *Professor of Forestry*, is exchange professor at Harvard for the year 1917-'18.

Courses of Instruction

ART.

PROFESSOR SAHM.

- 1.**Ancient Art*.—A study of the architecture, sculpture, and painting of Egypt, Assyria, Greece, and Rome. Special stress will be laid on Greek art and its perfect expression of Greek ideals. Recitations and lectures. First half-year, 2 hours.
2. *Renaissance Art in Italy*.—Prerequisite, Art 1. A study of Italian Painting from the Early Christian period to the height of the Renaissance. The major part of the course will be devoted to the study of the great masters of the 15th and 16th Centuries in Florence, Rome, and Venice. Recitations and lectures. Second half-year, 2 hours.
3. *The Art of Flanders and Holland*.—Prerequisite, Art 1. Flemish Painting from Van Eyck to Rubens and Van Dyck. The great Dutch painters of the 17th Century. Development of Portrait and Landscape Painting. Marine and Genre Painting. First half-year, 2 hours. Given in 1917-'18 and alternate years.
4. *The Art of Spain and France*.—Prerequisite, Art 1. Development of Spanish Painting under Italian and Flemish Influences. Velasquez and the Castilian School. Murillo and the Andalusian School. Survey of French Painting from the Early Renaissance thru 17th Century Classic Art. Second half-year, 2 hours. Given in 1917-'18 and alternate years.
5. *German and English Art*.—Prerequisite, Art 1. The German Painters of the 15th and 16th Centuries. The Portrait Artists of England in the 18th Century. Later English Art. The Pre-Raphaelite Brotherhood. First half-year, 2 hours. Given in 1918-'19 and alternate years.

*Open to Freshmen by special permission.

6. *Movements in 19th Century Art*.—Prerequisites, Art 1 and one other course. Summary and criticism of Modern Painting. Romanticism versus Classicism in French Art. The Barbizon School of Painters. Impressionism. Contemporary Painting in Europe. Brief Review of American Art. Second half-year, 2 hours. Given in 1918-'19 and alternate years.
7. *Art Seminar*.—Prerequisites, Art 1 and one other of the courses offered. Discussion of æsthetic problems. Detailed analysis of important movements in art. Study of European art centers. Conferences, reports, bibliography. Second half-year, 2 hours.
8. *History of Architecture*.—A study of the development of historical styles from antiquity to modern times with emphasis upon the structural and æsthetic principles upon which art form is based. First half-year, 2 hours.
9. *Mediaeval Art*.—Prerequisites, Art 1 and one other course. An advanced course in the study of the Romanesque and Gothic periods in Italy, France, Germany, and England, with special emphasis on Gothic architecture and sculpture in the 13th and 14th Centuries. Lectures and required readings. Second half-year, 2 hours.
10. *Greek and Roman Archaeology*.—Prerequisite, Art 1. An advanced course in Greek Vases, Greek and Roman Numismatics. First half-year, 2 hours.

ASTRONOMY.

PROFESSOR ALBRIGHT.

1. *General Astronomy*.—Introductory and descriptive. First half-year, 3 hours. Offered in 1918-'19 and alternate years.
2. *Elementary Meteorology*.—First half-year, 3 hours. Offered in 1919-'20 and alternate years.

NOTE.—For practical work and other lecture courses in art, see p. 114.

NOTE.—For a course in *Field Astronomy*, see Civil 2, p. 64.

3. *Constellations*.—Study of the stars; chart making. Lectures and night work. Credit one hour. Given in 1918-'19.

BIBLICAL LITERATURE AND APPLIED RELIGION.

(The work of this Department for 1917-'18 is suspended.)

18. *Biblical Introduction*.—A course covering such general information about the Bible as should be the possession of every student. A survey of the origin and contents of the various Bible books, especially with regard to their place in Hebrew or Christian history; including an analysis of the religious significance of the Prophetic and Priestly material, the Wisdom Literature, and the Apostolic histories and epistles; and summarizing the story of the transmission of the Bible through the various translations, to the present time. Not open to Freshmen, except by special permission of the instructor. First half-year, 3 hours.
22. *Old Testament History and Literature*.—Prerequisite, Bible 18 or Bible 4. Hebrew history to the time of Christ, and its relation to that of the great ancient empires. Special reference to the stages of the development of Hebrew religion, as expressed in the various types of Old Testament and Apocryphal literature. Second half-year, 2 hours.
20. *The Life of Jesus*.—A course designed to give a unified impression of the events of Jesus' life, and of their significance as a foundation for Christian history. Primarily for Sophomores and Freshmen. First half-year, 2 hours.
19. *The Apostolic Age*.—Prerequisite, except for Seniors, either Bible 18, 4, 22, or 20. The beginnings of Christianity. Preliminary outlines of the condition of the Roman world, and of the life of Jesus, followed by a study of the rapid spread of the teachings of Jesus as applied by his first followers. Second half-year, 2 hours.
23. *The Principles of Christianity*.—Prerequisite, any of the following: Bible 18, 4, 22, 20, 19, 15. The main Christian beliefs, and the various resulting Christian institutions,

including some comparison of Christianity with the great ethnic religions. First half-year, 2 hours.

21. *Community Problems and Christian Teachings*.—A survey of existing agencies of Reform, Philanthropy, and Social Service, in various types of American communities, and the problems they are attempting to solve, including a study of the purpose, methods, and comparative effectiveness of the Christian Church. Second half-year, 2 hours.
24. *Seminar in Applied Religion*.—Discussions of the aims and methods of religious and other social service institutions. Required field-work, chosen by the student, investigations and reports. Adapted to those already engaged in some form of community service. Fortnightly meetings during the year. Credit one hour, each half-year. Either Bible 11 or Bible 21 is a prerequisite, unless one of them is taken in conjunction with this course. It may be taken by Seniors, upon special permission, as a half-year course, the first half-year only.
4. *The Prophets*.—The place of the prophets in the development of Hebrew History. Their manhood and their message. First half-year, 2 hours.
11. *The Social Message of Jesus*.—With special reference to its bearing on modern social problems. First half-year, 1 hour.
15. *Present Day Religious Problems*.—The modern attitude toward such questions as God, the Bible, Sin and Punishment, the Future Life, etc. Second half-year, 1 hour.

NOTE.—For other allied courses see: Greek 8, New Testament Greek; Economics 104, Problems in Sociology; Philosophy 12, Psychology of Religion; also Philosophy 3, and Economics 22.

BIOLOGY.

*PROFESSOR SCHNEIDER, PROFESSOR KERNALL,

*ASSISTANT PROFESSOR BAKER, MISS SMITH.

1. *General Biology*.—A general outline of the fundamental principles of Biology. Some topics considered are the origin

*Absent on war service.

of living matter, organization, growth and reproduction, differentiations, evolution.

(a) First half-year: *Plant Studies*.—In the laboratory a comparative study is made of the cryptogams, beginning with the simplest forms. This is followed by a study of the life history of the pine and a typical flowering plant.

(b) Second half-year: *Animal Studies*.—The laboratory work involves a study of representatives of the principal groups of animals.

Recitations or lectures, 3 hours, laboratory work 4 hours; credit 3 hours.

PROFESSOR SCHNEIDER, MISS SMITH.

2. *Plant Physiology*.—Prerequisites, Biology 1, and one year of Chemistry. A laboratory, recitation, and lecture course on the functions of the organs of seed plants. Emphasis is placed upon composition and nutrition of plants, and the vegetable enzymes. First half-year, recitations or lectures 2 hours, laboratory work 4 hours, credit 3 hours. Given in 1917-'18 and alternate years.

3. *Botany of the Seed Plants*.—Prerequisite, Biology 1. Adaptations, migration, distribution, and successions are considered at length. Opportunity is also given the student to become proficient in the determination of plant species among gymnosperms and angiosperms. Field excursions for the purpose of studying the local plant geography. Second half-year, recitations or lectures, 3 hours; field or laboratory work, 4 hours, credit 3 hours.

MISS SMITH.

4. *Plant Histology*.—Prerequisite, Biology 1. This course, in addition to a study of plant structure, affords experience in the technic of microscopic preparations. The paraffin method, the celloidin method, the freezing method, the glycerine method, and free-hand sectioning are applied. First half-year, credit 2 or 3 hours (3 hours in the laboratory counting as 1 hour).

20. *Systematic Botany*.—Prerequisites, Biology 1 and 3. Some time will be spent on the pteridophytes and gymnosperms but most of the time will be given to the angiosperms. The evolution of the angiosperms will be taken up and all of the important families will be studied in detail. Second half-year, recitation or lecture 1 hour, field or laboratory work 3 hours, credit 2 hours.
21. *Plant Embryology*.—Prerequisites, Biology 1. A study of the reproductive tissues and their development in all the plant groups beginning with the Bryophytea, with special emphasis on the angiosperms. First half-year, recitation or lecture, 3 hours, laboratory work, 3 hours. Credit, 3 hours.
17. *Heredity and Variation* (Genetics).—Prerequisites Biology 1. A study of the theories of genetics and of the experimental proof upon which these theories are based. Second half-year, recitation and lectures, 3 hours. Given in 1917-'18 and alternate years. Open to Juniors and Seniors.

PROFESSOR SCHNEIDER.

5. *Bacteriology*.—Prerequisite, Biology 1. Apparatus; culture media and methods of preparation; sterilization methods; microscopic characteristics of cultures of bacteria in general and of special forms, and methods of diagnosis; methods of obtaining pure cultures; methods of staining; bacteriological investigations of water, air, and soil. Students electing this course are expected to take Biology 6. Second half-year, lectures or recitations 2 hours, laboratory work 3 or 6 hours, credit 3 or 4 hours. Given in 1918-'19 and alternate years. Open to Juniors and Seniors.
6. *Sanitary Science and Public Health*.—A lecture course. Some of the topics discussed are: Death and its causes; classification of diseases; ancient and modern theories of disease; germ theory of infectious disease; direct causes and predisposing causes of disease; means of avoiding resisting disease; vehicles of disease, such as dust, sew-

age, water, etc.; brief sketch of the important transmissible and epidemic diseases, prophylaxis, etc. Each half-year, 1 hour. In the absence of Professor Schneider on war service, the course was continued by Mrs. E. C. Schneider.

7. *Physiology and Personal Hygiene*.—Prerequisite, Biology 1. Lectures, recitations, and demonstrations dealing with the structure and activities of the human body. Emphasis is placed upon hygienic problems. Each half-year, 3 hours. In the absence of Professor Schneider on war service, the course was continued by Dr. C. W. Bortree.
8. *Experimental Physiology*.—Prerequisites, Biology 1 and 7, and one year of Chemistry. Students are advised to elect this course with Biology 7. The experimental work covers the following subjects: The physiology of ciliary motion; the general physiology of muscle and nerve tissue; phenomena of circulation, with countings of the blood corpuscles and estimation of hæmoglobin; respiratory exchanges, movements, etc.; digestion and absorption; physiology of the spinal cord and brain; of the cutaneous sensations, taste, smell, hearing, and vision. Each half-year, 3 hours in the laboratory, credit 1 hour.
9. *Physiology*.—Prerequisites, Biology 1 and Chemistry 2. This course is adapted to the needs of the student planning to study medicine. Each half-year, recitations or lectures, 3 hours; laboratory work 5 hours, credit 4 hours.
18. *Evolution*.—Prerequisite, Biology 1. The history of the theory; the evidences for descent; the theories of species-forming, with a study of statistical and experimental evidence. First half-year, 3 hours. Given in 1918-'19 and alternate years. Open to Juniors and Seniors.

PROFESSOR KERNALL, ASSISTANT PROFESSOR BAKER.

10. *Invertebrate Morphology*.—Prerequisite, Biology 1. A study is made of the advance in specialization from the Protozoa to the Vertebrates. Types of the more important groups are studied in the laboratory. This course is

especially recommended for those intending to teach Biology. First half-year, lectures or recitations 2 hours, laboratory work 4 hours, credit 3 hours. Given in 1917-'18 and alternate years.

15. *Comparative Anatomy of Vertebrates*.—Prerequisite, Biology 1. A comparative study of vertebrate structure. Dissections are made of the Amphioxus, Necturus, the shark's head, and a mammal. Second half-year, lectures 2 hours, laboratory work 4 hours, credit 3 hours.
11. *Histology*.—Prerequisite, Biology 1. A comparative detailed study of the tissues of the higher animals. Preparations of the principal tissues and organs are made and the common methods of preparation and mounting studied. Special microscopic drill is given in distinguishing the different tissues and organs. First half-year, recitations 2 hours, laboratory work 4 hours, credit 3 hours. Given in 1917-'18 and alternate years. In the absence of Professor Schneider on war service the course was continued by Dr. S. W. Schaeffer.
12. *Embryology and Cytology*.—Prerequisite, Biology 1. A study of maturation, fertilization, and cleavage of the ovum, early stages of the embryology of the chick and pig. Special attention is given to the differentiation and development of tissues and organs. Students make most of their own preparations. Second half-year, recitations or lectures 2 hours, laboratory work 4 hours, credit 3 hours. Given in 1917-'18 and alternate years.
14. *History of Biology*.—Prerequisite, Biology 1. A study of the lives and work of the more important men who have shaped biological thought and of the development of the latter. Recitations, lectures, and assigned readings. Second half-year, 2 hours. Given in 1918-'19 and alternate years.
13. *Entomology*.—A study of the kinds, structure, and life histories of insects, with some reference to the detrimental and useful forms. A collection of local forms will be

made and identified and a study of their habits will be carried on in the field. First half-year, lectures 2 hours, field and laboratory work 4 hours, credit 3 hours. Given in 1918-'19 and alternate years.

16. *Animal Distribution*.—Prerequisite, Biology 1. Lectures, assigned readings, and laboratory and field study. An attempt will be made, during the early portion of the half-year, to study the different local forms, both in the field and in the laboratory, and to outline the fundamental principles of Animal Ecology. After cold weather begins, the time will be spent on Zoogeography, the distribution of animals throughout the world. First half-year, lectures two hours, laboratory or field work 4 hours, credit 3 hours. Given in 1918-'19 and alternate years.

LABORATORY FEES.

Course 1, 2, 4, 10, 11, 12, 13 or 15.....	\$3.00
Course 3 or 16	1.50
Course 5 or 9	6.00
Course 8 ..	4.00

BUSINESS ADMINISTRATION AND BANKING.†

*PROFESSOR PERSONS, ††PROFESSOR BLUM, ASSISTANT PROFESSOR DICE, ASSISTANT PROFESSOR ELLINGWOOD AND MR. TAYLOR.

12. *Mathematical Theory of Investments*.—A course covering progressions, limits, and series, logarithms, graphic representation, interest, annuities, amortization, valuation of bonds, sinking funds and depreciation, theory of probability, life annuities and the elements of life insurance. Prerequisite, Mathematics 1. Second half-year, 3 hours. —PROFESSOR ALBRIGHT.

*Absent on war service.

††Resigned at end of first half-year.

†NOTE.—Of the courses listed here, only Business 4 and 7 will count toward a major in Economics.

1. *The Theory and Practice of Accounting.*

(a) Double-entry drills, modern forms of accounting and practice in the use of essential books. Business forms, methods, and documents such as drafts, notes, and bills of lading.

(b) Partnership and corporation accounts, analysis of classified statements, manufacturing and trading accounts. Accounting procedure. Not open to Freshmen. Each half-year, 3 hours.

14. *Advanced Accounting.*—Amortization and depreciation accounts, annuities, cost accounting, auditing and advanced accounting procedure. Prerequisite, Business 1. Second half-year, 2 hours.

3.**Commerce and Industries.*—Prerequisite, Economics 21. After a survey of the development and status of foreign industries, natural resources and the expansion of commerce, a special study is made of the principal articles which enter into American commerce. Resources, industries, and trade currents are treated. Second half-year, 3 hours.

4.**Corporation Finance and Industrial Organization.*—Historical development and analysis of the different forms of industrial organization, including the partnership, joint-stock company, and the corporation, and the later developments, such as the pool, trust, combination, and holding company. Elements of corporation finance, with special reference to organization and management. The evils of corporate organization, such as fraudulent promotion, over-capitalization, and manipulation. Public policy toward corporations, with special reference to taxation. A brief consideration of public-service corporations with special reference to municipal utilities. First half-year, 3 hours.

*Prerequisite, Economics 1.

5. *Commercial Law* (First year).—The first half-year will be given to the study of the general law of contracts. In the second half-year, a more detailed study will be made of Negotiable Instruments, Sales, and Bailments. Open only to Juniors and Seniors. Each half-year, 3 hours.
13. *Commercial Law*. (Second year).—First half-year: Carriers, Insurance, Guaranty and Suretyship, Agency. Second half-year: Partnership, Corporations, and an introduction to the law of property with emphasis upon the law of decedents' estates. Prerequisite, Business 5. Each half-year, 2 hours.
- 6.**Business Organization and Management*.—An intensive study of the principles and mechanism of organization and management, with special emphasis on the following phases: the general institutions and forms of management; the determination and direction of operations; the plant, its site, construction and adaptation to the business; purchasing; the custody and treatment of stores and stock; the selection, care, and maintenance of tools and machinery; the selection, treatment, and payment of labor; selling and the organization and management of the sales force; credit and collections; advertising. Various types of business—retail, wholesale, and manufacturing—are considered, and a careful study is made of the principles of Scientific Management. Prerequisite, Business 1. Second half-year, 3 hours.
- 7.**Transportation*.—Steam Railways. (a) The railway problem of the United States, including theories of rates, combination and pooling, consolidation, community of ownership, and government ownership or control, involving a careful consideration of the work of the Interstate Commerce Commission and of State commissions. (b) A comparative study of the railway systems of other countries, especially England, Germany, France, Canada, and the Australian Commonwealth, with a consideration

*Prerequisite, Economics 1.

of the economic significance of the world's great railway systems.

Transportation and communication other than by steam railways. (a) Lake, river, and canal transportation in the United States and other countries. (b) Ocean transportation with special reference to its relation to the transportation systems of various countries. (c) Interurban railways and their growing competitive power, telegraphs, telephones, and cables. First half-year, 3 hours.

9.**Banking Practice*.—Outline of the work of commercial, savings and financial banks and trust companies. The nature of investments of the different institutions. The federal reserve system and its functions. The nature of the demand for credit and currency. The documents used in foreign exchange. Commercial and travelers' credits. Currency movements and their causes. Parity sheets and the method of computation of parities. Prerequisite, Economics 9. First half-year, 3 hours.

10.**Investments and Speculation*.—Investment Banking. Speculation and the organized exchanges. A study of the phenomena connected with business prosperity and depression, industrial crises and financial panics. History and theory of business cycles. Effects of business cycles on investments, speculation, and business enterprise. Prerequisite, Business 9. Second half-year, 3 hours.

15.**Relation of Legislation to Economics*.—First half-year, 2 hours. Study of the Police Power. The law of conspiracy with special reference to the trade union. The interpretation of the Anti-trust laws. The power of commissions and boards to regulate business.

CHEMISTRY.

PROFESSOR STRIEBY.

2. *Advanced Chemistry*.—The lectures treat chiefly of Inor-

*Prerequisite, Economics 1.

ganic Chemistry, but half of the second semester is given to Organic Chemistry. Emphasis is placed on the principles of chemical science, the chemical laws and their methods of deduction, structural formulæ, chemical reactions and stoichiometry. The applications of chemistry to the arts, to sanitary science and to common uses, are made prominent. Abstracts from books or description of observed processes are required in each semester. The laboratory work affords a practical introduction to the qualitative analysis of common acids and bases, and also gives limited practice with balances and burettes in exact quantitative determinations by gravimetric methods and with standard solutions. (Gas determinations and partial analysis of water is also included.) Engineering students will be given instruction in the theory and practical work of fuel sampling and analysis, flue gas analysis, and boiler water analysis, in addition to the regular work of Chemistry 2. Each half-year, lectures 3 hours, quiz 1 hour, laboratory work 4 hours, credit 3 hours.

5. *Organic Chemistry*.—Prerequisite, Chemistry 2. Remsen's *Organic Chemistry*. Recitations, lectures and discussions of special subjects and processes. Each half-year, recitations 3 hours, quiz 1 hour, laboratory work 4 hours, credit 3 hours.
6. *Theoretical Chemistry*.—Prerequisite, Chemistry 2. Text-book work with lectures and oral and written discussions. Each half-year, 3 hours.
7. *Medical Chemistry*.—Prerequisite, Chemistry 2. It is recommended that Chemistry 5 precede this course. Lectures, text-book, assigned reading, and laboratory work. The study is mainly of substances, inorganic and organic, that are of importance, in medical science and hygiene. Special attention is devoted to the examination of carbohydrates, proteins, fats, blood, milk, urine, and digestive agents. The needful gravimetric determinations, considerable volumetric work with burettes and standard solutions, and microscopic and spectroscopic tests, supplement the usual qualitative examinations.

Hawk's *Physiological Chemistry*. Each half-year, recitations 4 hours, laboratory work 8 hours, credit 4 hours.

MR. LOVE.

1. *Elementary Chemistry*.—Text-book work (chiefly Inorganic Chemistry) supplemented by lectures and discussions upon the fundamental laws, the application of chemistry to sanitary science, medicine, and some of the arts, and also by occasional papers from descriptions in technical books, and by reports of visits to metallurgical and manufacturing establishments. Remsen's *College Chemistry*. Each half-year, recitations 3 hours, laboratory work 4 hours, credit 3 hours.
3. *Qualitative Analysis*.—Prerequisite, Chemistry 2 or equivalent. Required of all majors in Chemistry. Experimental drill in obtaining characteristic reactions of the more common elements, study of empirical formulæ and symbolic expression of reactions, solution of substances, separation of groups and elements, and analysis of simple salts and of complex mixtures and alloys. The laboratory work deals mainly with inorganic substances. The lectures, given two hours per week during the first quarter, take up the laboratory work in detail. First half-year, laboratory work 8 hours, credit 4 hours.
4. *Quantitative Analysis*.—Comprises one full year's work. 4a begins in January, 4b in September.
 - (a) Prerequisite, Chemistry 3. Required of all majors in Chemistry. The laboratory work begins with the determination of single elements by approved Gravimetric and Volumetric methods. This is followed by the Proximate analysis of coal with its calorific power, limestone, boiler water and flue gas analysis. The lectures treat of the methods of analysis, properties of precipitates, stoichiometry, sampling, reporting, and the theory of solutions. One half-year, recitations 1 or 2 hours, laboratory work 8 hours, credit 4 hours.
 - (b) Prerequisite, completion of 4a. The laboratory work

and lectures are continuations of 4a, taking up the analysis of iron, copper, manganese, zinc and lead ores; a complete feldspar analysis; and determinations of sulphur and silicon in steel and pig iron. One half-year, recitations 1 hour, laboratory work 12 hours, credit 5 hours.

8. *Agricultural Chemistry*.—Prerequisite, Chemistry 4a. A study of soils, fertilizers, and foods; the analysis of soils, manures, and dairy products. Each half-year, recitations 1 hour, laboratory work 5 hours, credit 3 hours.
9. *Assaying*.—Prerequisite, Chemistry 4a and 4b. Sampling assaying of gold, silver, copper, and lead ores, mattes and bullions. Lectures and laboratory practice. Second half-year, recitations 1 hour, laboratory work three 4-hour periods, credit 4 hours.

The fee for every course must be paid in advance. It covers the cost of gas, chemicals, and non-returnable supplies, except platinum. Glassware and necessary apparatus (except platinum vessels) are loaned to the student and must be returned in good condition. A deposit generally sufficient to cover the cost of breakage and injury to the apparatus loaned to the student, must be made in advance of all laboratory work. An increase of this deposit may be required at any time should the need for it arise. All excess of the deposit over the cost of breakage and charges will be remitted to the student if, before the close of the year, he returns the apparatus in suitable condition for reissue. The fees are as follows:

Course 1, each year's work.....	Fee, \$ 7.00; Deposit, \$2.00
Course 2, " " "	" 8.00; " 2.50
Course 3 or 4, each year's work ..	" 15.00; " 3.50
Course 5 or 7, " " " " ..	" 15.00; " 3.50
Course 8, " " " " ..	" 10.00; " 2.50
Course 9, " " " " ..	" 20.00; " 2.00

No portion of the fee can be returned to any student who drops his course later than the first of December.

CIVIL AND IRRIGATION ENGINEERING.

ASSISTANT PROFESSOR OKEY, PROFESSOR ALBRIGHT.

1. *Theory and Practice of Surveying*.—Mathematics 3 must precede or accompany this course. Theory of plane surveying; construction, use, care and adjustment of instruments. Computation of area and volumes; map specifications. Recitations and problems. Second half-year, 2 hours. *Required of Civil Engineers and Foresters in the Freshman year.*
2. *Field Astronomy*.—Prerequisite, Civil Engineering 1, Civil Engineering 201. The practical application of astronomy to the problems of surveying. Determination of latitude, longitude, azimuth, and time by means of the sextant, engineer's transit, and chronometer. Second half, Sophomore year. Two recitations, three hours' field work, credit 3 hours. *Required of Civil Engineers.* Fee, \$2.00.
5. *Advanced Surveying*.—Course 1 continued. Theory of topographic, hydrographic, geodetic, city and mine surveying; stadia measurements and plane table. Recitations, lectures and problems. First half-year, 2 hours. *Required of Civil Engineers in the Junior year and Foresters in the Sophomore year.*
7. *Elementary Plane Surveying*.—A course in the use and adjustment of instruments for Electrical Engineers. The course is designed to give a general idea of surveying methods and the use of simple surveying instruments. It is necessarily elementary in character and restricted in scope. Second half, Junior year, three hours' field work, credit 1 hour. *Open only to Junior Electrical Engineers.* Fee \$2.00.

MR. ROBERTSON.

20. *Railway Curves*.—Theory of simple, compound, and transition curves, vertical curves, frogs, switches, and crossings. Recitations, field work, lectures, and problems. First half, Junior year, 2 hours. *Required of Civil Engineers.*

21. *Railway Engineering*.—Reconnaissance; preliminary survey; maps and profiles; location; cross-sections; earth-work computations; mass diagram; yard layouts for freight and passenger use; construction of wooden trestles and masonry culverts; tunnels; track; water supply, its quality, storage, and delivery; preservation of timber; block signals; general maintenance. Recitations, problems, maps and field work. Second half, Junior year, 3 hours. *Required of Civil Engineers.*
22. *Railway Economics*.—Sources and value of train resistance; the relation of curvature and grades to velocity and maximum train load; effect of momentum; balance of grades for unequal traffic; analysis of operating expenses; cost of extra distance, curvature, rise and fall, and of additional trains; effect of roadbed on cost of running trains; pusher grades; value of additional traffic; improvement of old lines; standard plans; estimates of cost. Lectures, recitations, problems. First half, Senior year, credit 2 hours. *Required of Civil Engineers.*

ASSISTANT PROFESSOR OKEY, MR. ROBERTSON.

31. *Masonry*.—Cement, concrete, and masonry; stone and brick, requisites, tests, durability, classifications, and specifications; stone-cutting, quarrying, dressing and bedding; manufacture of brick; composition and manufacture of limes and cements; their requisites, tests, specifications, preservation, and use; natural and Portland cements, sand, gravel, broken stone; proportions and quantities of concretes; economic proportions; concrete mixing and depositing; artificial stones; preservations; methods of quarrying; drilling, channeling, and wedging, use of explosives; classification and specifications of stone and brick masonry; measurements and cost; strength and durability; safe loads on masonry. Recitations, lectures, and notes. First half, Junior year, 2 hours. *Required of Civil and Irrigation Engineers.*
32. *Reinforced Concrete*.—Prerequisite, Civil 81. Properties of concrete and steel; concrete and steel in combination;

temperature stresses; theory and design of rectangular beams, slabs, cross beams, girders, and columns; use of slab, beam, and column tables and diagrams; complete design and detailed drawings of a reinforced concrete girder bridge, and a six-story reinforced concrete building. Recitations, problems, and design work in the drafting room. First half, Senior year, 2 hours. *Required of Civil and Irrigation Engineers.*

33. *Foundations.*—Foundations of steel grillage and of concrete-steel for buildings; safe loads on masonry and foundation beds; examinations of foundation sites; pile driving and pile foundations; sheep piling and coffer-dam methods; pneumatic foundations and caisson work; open dredging; bridge piers of masonry and steel; deep foundations; sub-aqueous tunneling. Recitations. First half, Senior year, 2 hours. *Required of Civil and Irrigation Engineers.*

ASSISTANT PROFESSOR OKEY, MR. ROBERTSON.

41. *Hydraulics.*—Flow of water thru orifices; time required for discharge of canal locks and similar volumes; weir discharge and gauging by weirs; gauging of water for irrigating systems; flow thru pipes; design of pipe systems; the Venturi meter; flow and discharge of open canals and rivers; principles of impulse and of reaction water wheels. First half-year, 2 hours. Recitations and problem work. *Required of all Junior Engineers.*
42. *Hydraulic Laboratory.*—Application in the laboratory of the principles and theory studied in Course 41. First half, Junior year, laboratory 3 hours, credit 1 hour. Open to those who have registered in Course 41. *Required of Junior Civil Engineers.* Fee, \$3.00.
43. *Hydraulic Engineering.*—Continuation of Course 41. Collection and storage of water; analysis of hydrographic data with particular reference to Colorado and other western States; hydraulic motors; design of hydro-electric power plants. Recitations, lectures, and assigned reading. Credit 2 hours. *Required of Senior Irrigation and Electrical Engineers.*

ASSISTANT PROFESSOR OKEY AND MR. ROBERTSON.

51. *Irrigation Engineering*.—Irrigation of land; amounts and periods of applications; grades, cross-section, and capacity of canals; surveys for irrigation works; source of water supply; hydrographic data; Colorado streams; return of seepage waters; irrigation by pumping. Lectures, recitations, and assigned reading. Second half, Senior year, 3 hours. *Required of Senior Civil Engineers and of Junior Irrigation Engineers.*
61. *Water Supply*.—Rainfall and storage; flow of streams; influence of soils, elevation and geologic characteristics of water-shed; methods of supply; underground flow; reservoir construction; distributing systems; house-supply and wastage; water purification; sand filters, design and construction of water supply system for typical town; maintenance, and office records. Recitations, lectures, collateral reading, and design work. First half, Senior year, 3 hours. *Required of Civil and Irrigation Engineers.*
62. *Sanitary Engineering*.—Treatment and disposal of sewage and refuse by sedimentation, precipitation, and use of septic tanks; treatment of effluence by continuous and intermittent sand filtration; fertilization; disposal of sludge; sewage and surface drainage of cities and towns; separate and combined systems of sewers; capacity of mains and branches; catch-basins, manholes; flush-tanks; outfalls; grades and sections; flow and discharge of sewers; construction. Lectures, recitations, and assigned readings. Second half, Senior year, 2 hours. *Required of Civil and Irrigation Engineers.*
71. *Roads, Pavements, and Parks*.—Surveys and locations; drainage and grades; foundations; selection and treatment of materials; maintenance of roads and pavements; design, construction, and maintenance of parks and parkways. Second half, Senior year, 2 hours. *Required of Civil Engineers.*

ASSISTANT PROFESSOR OKEY AND ASSISTANTS.

81. *Resistance of Materials*.—Laws of elasticity in homogeneous materials; coefficients of elasticity; relations between

stresses and strains; common theory of torsion and flexure; elastic limits, working stresses and ultimate resistance of wrought iron, cast iron, steel, alloys, timber, simple and continuous beams; design and construction of iron, steel, and timber columns and beams; shafts. First half-year, 3 hours; second half-year, 2 hours. *Required of all Junior Engineers.*

82. *Testing Laboratory.*—Tests of the materials of construction, including steel, wrought iron, cast iron, brick, stone, cement, concrete, and timber. Each student is required to make individual tests and reports. Second half-year, one 3-hour laboratory period per week. Credit 2 hour. Required of all Junior Engineers. Fee \$5.00.

83. *Stress Analysis.*—Prerequisite, first half-year of Civil 81. Analyses of stresses in simple, non-continuous trusses with parallel chords, curved chord trusses and plate girders, under fixed, moving and wind loads. Stresses in roof trusses by analysis. Design of columns and floor systems for buildings. Two recitations, one drafting room period and problems. Second half, Junior year. Credit 3 hours. *Required of Civil Engineers.*

84. *Bridge Design.*—Prerequisite, Civil 83. Railway and highway bridges; pin and riveted connections; the design of details for bridges, roofs, and buildings; floors for railway and highway bridges; complete designs and detail drawings of a roof truss, a deck plate girder, and a thru pin connected railway truss. First half-year, two recitations and three hours in the drafting room; second half-year, two recitations and six hours in the drafting room. Thruout the Senior year. Credit, first half-year, 3 hours; second half-year, 4 hours. *Required of Civil Engineers.*

201.**Field Practice in Plane Surveying.*—Prerequisite, Civil 1, Graphics 1. Four weeks in Manitou park, between the Freshman and the Sophomore years. Credit 4 hours.

*Given in Manitou Park during June and July.

Required of Civil and Irrigation Engineers and Foresters. Fee, \$10.00.

- 211.**Field Practice in Advanced Surveying.*—Prerequisite, Civil 5. Forester's Course. Credit 4 hours. Four weeks in Manitou Park. *Required of Foresters. Fee, \$10.00.*
- 221.**Railway Field Work.*—Prerequisite, Civil 21. Two weeks in Manitou Park, between the Junior and the Senior years. Credit 2 hours. *Required of Civil Engineers.*
- 241.**Field Practice in Hydrographic and Geodetic Surveying.*—Two weeks in Manitou Park, between the Junior and the Senior years. Credit 2 hours. *Required of Civil Engineers. Fee for Courses 221 and 241 together is \$10.00.*
- 251.**Field Practice in Irrigation Surveying.*—Prerequisite, Civil 5. Four weeks in Manitou Park, between Junior and Senior years. Credit 4 hours. *Required of Irrigation Engineers. Fee, \$10.00.*

ECONOMICS AND SOCIOLOGY.†

**PROFESSOR PERSONS AND ASSISTANT PROFESSOR DICE.

1. *Principles of Economics.*—A general survey based upon the study and discussion of a text-book giving the currently accepted scientific analysis of industrial society, supplemented by lectures and assigned readings on current economic problems. The purpose of the course is to teach fundamental principles, to open the field of economics in the way most helpful to further more detailed study of special problems, and to give to those who intend to adopt business, law, or journalism, the general rules and principles contributed to business by the science of economics. Not open to Freshmen. Each half-year, 3 hours.
21. *Commercial Development.*—The history of intersectional and

*Given at Manitou Park during June and July.

†NOTE.—All of the courses listed in Economics and Sociology count toward a major in Economics. Other courses, to count as part of the thirty hours required to make a major, must be approved by the professor under whom the major is taken.

**Absent on war service.

international commerce. The organization of industry in Europe and the United States. Emphasis on the period 1750-1850. Economics 1 must precede or accompany this course. First half-year, 3 hours.

2.**Advanced Economic Theory*.—A study of the history of economic thought since the time of Adam Smith, with special reference to the economic conditions which influenced those theories. The latter part of the course will be devoted to an examination of modern theories of distribution. Second half-year, 3 hours. Given in 1917-'18 and alternate years.

9.**Money and Banking*.—The history and theory of money, credit, and banking. The evolution of metallic currency; the position of the bimetalists and the quantity theorists, credit, credit instruments, paper money, convertible and inconvertible notes, modern currency problems, and foreign banking systems are studied with special reference to American currency and banking. Discussions of current topics and statistics relating to money, banking, domestic and foreign commerce and exchange, price movements, etc. Students will be expected to subscribe to a standard financial journal. Second half-year, 3 hours.

10.**Public Finance*.—A survey of the whole field of public finance, including (a) public revenues, their nature, classification and characteristics, with special emphasis on taxation; (b) public expenditures, their classification and relation to public welfare and to governmental functions; (c) the budget and its preparation in the great countries of the world; (d) public credit, its nature, employment, industrial effects, and administration. Second half-year, 3 hours. Given in 1918-'19 and alternate years.

18.**Statistics*.—The history, theory, and methods of statistics. The making of schedules; the collection and tabulation of data; averages; graphic representation; frequency tables and curves; correlation; interpolation, etc. Second half-year, 3 hours.

*Prerequisite, Economics 1.

- 19.**Insurance*.—The theory of insurance; the development of insurance companies; the various systems of insurance; company management: The mathematics of compound interest, including annuities certain. The theory of probabilities as applied to the construction of mortality tables; the computation of reserve, surplus, premiums, endowments, dividends, etc., for life insurance. First half-year, 3 hours. Given in 1917-'18 and alternate years.
- 22.**Labor Problems and Socialism*.—Present day labor problems connected with trade and industrial unions, wages, unemployment, efficiency, political action and theories, conciliation, and arbitration. The history of the labor movement during the period 1750 to date. Second half-year, 3 hours. Given in 1917-'18 and alternate years.
- 101.**Principles of Sociology*.—In this course an attempt is made to formulate the fundamental laws of association, with special reference to their relation to social progress. Such topics as the influence of the physical environment, natural selection, warfare, division of labor, sex and sexual selection, heredity, imitation, social oppositions, art, science and religion, will be discussed with reference to their effects on social progress. First half-year, 3 hours.
- 104.**Problems in Sociology*.—A study of particular social problems, including suicide, the liquor problem, divorce, immigration, poverty, crime, etc. Second half-year, 3 hours. Given in 1918-'19 and alternate years.

EDUCATION.

[Education courses are open to Juniors and Seniors only.]

PROFESSOR BREITWIESER.

3. *Mental Development*.—Kirkpatrick's *Fundamentals of Child Study* and his *Genetic Psychology* are used as a point of departure. Class reports and discussions. First half-year, 2 hours.
4. *Educational Psychology*.—A study of the psychology of pu-

*Prerequisite, Economics 1.

pils in the schools, adolescence, sex, deficient children, environment, and heredity. Second half-year, 2 hours.

6. *Practice Teaching*.—This course meets the requirements of the State Board of Examiners concerning Practice Teaching. Provision is made for practice teaching in both primary and secondary grades. An examination in the common branches will be required, except for those who hold a second grade certificate. Either half-year, 4 hours.

PROFESSOR BREITWIESER AND MR. GERLACH.

5. *Research Work in Problems of Educational Psychology*.—For graduate students and advanced undergraduates. Hours to be arranged. This course gives an excellent opportunity for candidates for the A. M. degree to combine that work with practical work in the Colorado Springs schools.

MR. GERLACH.

1. *History of Education*.—A study of the more important educational theories and movements in their larger relationships. The historical problems are treated as far as possible from the standpoint of social psychology, and their relation to present day questions is emphasized. Graves' *History of Education* is used as a basis. First half-year, 2 hours.
2. *Modern Educational Development*.—A continuation of the History of Education in which emphasis is put upon the movements affecting present systems. Readings from current educational literature. Second half-year, 2 hours.
7. *School Problems*.—This course is designed to give practical instruction to those who expect to teach. Reports, discussions, and lectures will be given on school organization, administration, management, etc. Second half-year, 3 hours.
8. *Modern Educational Systems*.—A study of the present educational systems of a number of the principal foreign countries, and comparisons with the American system. Emphasis will be placed upon the more important causes and effects. Second half-year, 2 hours.

9. *Principles of Education*.—Fundamentals which underlie the educative process are discussed. The curriculum, aims, values, agencies, and internal development are taken up in an attempt to place education upon a scientific basis. Bolton's *Principles of Education* will be used. First half-year, 3 hours.
10. *Educational Measurements*.—The theory and use of statistics as applied to educational research and standardization; with a critical study of various school tests in use at the present time. First half-year, 3 hours.

NOTE 1.—The opportunities for practice teaching are made possible by the generous coöperation of the officers and teachers of the public school systems of Colorado Springs and Colorado City, and of the San Luis School.

NOTE 2.—For courses in other departments intended especially for teachers, see Greek 7, Latin 8, English 25, German 12, History 22, Spanish 10, Mathematics 7, Physics 7.

NOTE 3.—The Colorado College School of Music and the Department of Fine Arts offer special teacher's courses in music and drawing.

ELECTRICAL ENGINEERING.*

**PROFESSOR THOMAS AND ASSISTANT PROFESSOR McNAIR.

1. *Elements of Electrical Engineering*.—A theoretical course covering the fundamental principles of direct currents and their application in direct current machinery. The text used is Langsdorf's *Principles of Direct Current Machines*, and is supplemented by lectures and assigned work in Lyon's *Problems in Electrical Engineering. Required of Electrical Engineers*. First half, Junior year, credit 4 hours.
2. *Alternating Current Theory*.—Prerequisite, Electrical Engineering 1. A continuation of Electrical 1, taking up alternating current theory and application in alternating current circuits. Texts: Drysdale's *The Foundations of Alternate Current Theory*, and Lyon's *Problems in Electrical Engineering*. The text-book work is supplemented

*Laboratory Fees: See Note, p. 77.

**Absent during the year 1917-'18.

by lectures. *Required of Electrical Engineers.* Second half, Junior year, credit 3 hours.

3. *Advanced Electrical Laboratory*.—Magnetic measurements, the measurement of conductivity and insulation resistance, the calibration of direct-current instruments and tests such as the location of faults in telephone circuits, etc. First half, Junior year, two 3-hour periods, credit 2 hours.
4. *Alternating-Current Measurement*.—Prerequisite, Electrical Engineering 2. The calibration of commercial alternating-current instruments for the measurement of current, electromotive force, and power. Also studies of the instrument transformer, phase and frequency meters, and of inductance, effective resistance, and resonance. The measurement of power and the phase relations of poly-phase circuits. First half, Senior year, one 3-hour period, credit 1 hour.
5. *Alternating-Current Machinery*.—Prerequisite, Electrical Engineering 1 and 2. A lecture course on alternating current machinery, including generators, motors, converters, and transformers. The lectures are supplemented with problem work and assigned reading in Lawrence's *Principles of Alternating-Current Machinery*. McAllister, Karapetoff, Steinmetz, and the technical press. *Required of Senior Electrical Engineers.* Throuout the Senior year. 3 hours, each half-year.
6. *Electrical Measuring Instruments*.—A course of study in the theory of various direct-current measuring instruments, including those used in Electrical 3. Text: Jansky's *Electrical Meters*. The text is supplemented by lectures. Second half, Junior year, 1 hour.
7. *Alternating-Current Instruments*.—The theory of various types of alternating-current measuring instruments, including the instruments used in Electrical 4. A continuation of Electrical 6, using the same text. First half, Senior year, 1 hour.
8. *Direct-Current Electrical Engineering Laboratory*.—Prerequisite, Electrical Engineering 1. The work of this

course includes the ordinary tests of direct-current machinery, such as efficiency by brake for motors, by loading for generators, and by the stray-power method, heat runs, regulation and parallel running, and the analysis of losses. Each student presents a carefully prepared preliminary report covering the theory of the experiment and the method of procedure, which is corrected and must be approved before the experiment may be performed. Each student also presents a final report which in addition to the working up of the experiment includes an analytical discussion of the experiment and its results. Equivalent to Physics 14. Second half, Junior year, one afternoon for preliminary reports and one 3-hour laboratory period, credit 3 hours.

9. *Electrical Distribution*.—Prerequisites, Electrical Engineering 1 and 2. A lecture course dealing with commercial and technical features of the generation, distribution, and consumption of electrical energy. First half, Senior year, 2 hours.
10. *Electrical Engineering*.—Prerequisite, Electrical Engineering 9. A lecture course dealing with some of the problems and systems of long-distance, high-tension transmission and electric traction. This lecture course is supplemented with problems. In the last part of the term, Steinmetz's *Transient Electric Phenomena* is used as a text. Second half, Senior year, 2 hours.
11. *Alternating-Current Electrical Engineering Laboratory*.—Electrical Engineering 5 must precede or accompany this course. The work of this course includes such tests as regulation from open and short-circuit characteristics, regulation and efficiency by loading, efficiency by the retardation method of analyzing losses, and the parallel operation of alternators; synchronous motor tests, induction motor tests, and tests of the losses and regulation of transformers, both by loading and by "loading back." Thruout the Senior year. One afternoon for preliminary reports, and one afternoon laboratory period, each half-year, credit 3 hours.
12. *Dynamo Design*.—Prerequisites, Electrical Engineering 1

- and 2. A lecture and class room course, considering the materials of construction, armature windings, and the principles of calculation in the design of direct-current machines and transformers. Text: Gray's *Electrical Machine Design*. First half, Senior year, 1 hour.
13. *Electrical References*.—A course of reference work in connection with the important articles in the current technical and scientific periodicals. Assigned readings and abstracts. Thruout the Senior year. Each half-year, 1 hour.
14. *Electrical Engineering for Civil and Mining Engineers*.—This course, required of all engineers except Electrical Engineers, is given thruout the Senior year. It covers the principles of both direct and alternating currents and their application in machines and transmissions. Text: Gray's *Principles and Practice of Electrical Engineering*. Each half-year, 3 hours.
15. *Power Plants*.—A study of steam boilers, reciprocating engines and their valve gears, and turbines. The construction, operation, and testing of the machines and their auxiliaries, and the conditions affecting their economical use are considered in detail. Lectures, problems, and assignments in *Engineering of Power Plants* by Fernald and Orrok. Second half, Junior year, 2 hours.
16. *Thermodynamics*.—A study of the principles and concepts of thermodynamics which are essential to the study of the construction and operation of the steam engine, steam turbine, air compressor, gas engine, and their auxiliaries. Text: Moyer and Calderwood's *Engineering Thermodynamics*. Required of all Engineers. First half, Junior year, 2 hours.
17. *Engineering Inspections*.—An excursion course designed to acquaint the student with modern practice in electrical and mechanical engineering by visiting power and manufacturing plants. Four or five days are spent each year on one of these trips. One trip is to Denver and vicinity and the alternate trip includes Pueblo, Cañon City, and the Cripple Creek District. A written report on each

trip is required. *Required of Junior and Senior Electrical Engineers.* Credit 1 hour for both trips.

Laboratory Fees per half-year: Electrical Engineering 4, \$3.00; Electrical Engineering 3, \$4.00; Electrical Engineering 8 and 11, \$5.00; Electrical Engineering 14, \$4.00.

ENGLISH.

Group I. Required Courses.

1. *Rhetoric and Composition*.—Elementary Course. Readings, chosen to represent the principal literary types. Required of all Freshmen. Each half-year, 3 hours.—PROFESSORS NOYES, MOTTEN, AND PATTEE.
2. *The Greek Epic*.—A course designed to provide a foundation for later literary studies. Lang, Leaf, and Myers' *Iliad* and Palmer's *Odyssey* are used. Thesis. Required of all Sophomores who are candidates for the degree of A. B., except those who have previously had a similar course. First half-year, 3 hours.—PROFESSORS NOYES AND PATTEE.
- 2a. *Classical Prose*.—A course required of Sophomores who have had the Greek Epics, and elective for all except Freshmen. The basis of the course will be such Greek and Latin authors as Demosthenes, Lysias, Cicero, and others; and with these will be included a study of modern English and American argumentative literature. First half-year, 3 hours. PROFESSOR MOTTEN.

Group II. Optional Courses. All candidates for the degree of A.B. must take one course in this group. Courses 4 and 5 are open to all students; courses 9, 16, 17 and 19 are open only to Sophomores, Juniors, and Seniors; courses 12 and 13 are open only to Juniors and Seniors.

4. *American Literature*.—Irving, Cooper, Poe, Bryant, Hawthorne, Longfellow, Emerson, Lowell, Holmes, Whittier. First half-year, 3 hours. Given in 1918-'19 and alternate years.—PROFESSOR PATTEE.
5. *Outline History of English Literature*.—Each half-year, 3 hours. Given in 1917-'18 and alternate years.—PROFESSOR PATTEE.

9. *Shakespeare*.—The principal plays read chronologically. Second half-year, 3 hours. Given in 1918-'19 and alternate years.—PROFESSOR PATTEE.
12. *English Poetry from Dryden to Burns*.—First half-year, 3 hours. Given in 1918-'19 and alternate years.—PROFESSOR PATTEE.
13. *Wordsworth, Coleridge, Byron, Shelley, Keats*.—Second half-year, 3 hours. Given in 1918-'19 and alternate years.—PROFESSOR PATTEE.
16. *Eighteenth Century Prose*.—First half-year, 3 hours. Given in 1919-'20 and alternate years.
17. *Nineteenth Century Prose*.—J. S. Mill, Carlyle, Newman, Arnold, Ruskin, Pater. Second half-year, 3 hours. Given in 1917-'18 and alternate years.—PROFESSOR PATTEE.
19. *Nineteenth Century Novelists*.—Jane Austen, Scott, Dickens, Thackeray, George Eliot, Stevenson. Second half-year, 3 hours. Given in 1917-'18.—PROFESSOR NOYES.

Group III. Other Electives open to all students.

10. *Shakespeare*.—An intensive study of three or four plays, with special emphasis on the language. Second half-year, 3 hours.—PROFESSOR PATTEE.
23. *Old English*.—The beginnings of English Literature. Reading is begun at once and the study is made as literary in character as possible. First half-year, 3 hours. Given in 1917-'18.—PROFESSOR NOYES.
24. *Old English—Beowulf*.—Prerequisite, English 23. Second half-year, 3 hours. Given in 1919-'20 and alternate years.—PROFESSOR NOYES.
39. *American Literature since 1870*.—A careful study of the American literature of the last fifty years. Second half-year, 3 hours. Given in 1918-'19.—PROFESSOR PATTEE.

Group IV. Electives open only to Sophomores, Juniors, and Seniors.

3. *Advanced Composition*.—Second half-year, 2 class exercises, credit 3 hours. Omitted in 1918-'19.

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6. *Chaucer*.—The *Canterbury Tales* read critically in class. Life and thought of the times. Supplementary reading. Thesis. First half-year, 3 hours.—PROFESSOR NOYES.
- 6a. *Chaucer*.—Continuation of Course 6. Study of Chaucer's poems completed. Supplementary readings and thesis. Second half-year, 3 hours. Given in 1916-'17.—PROFESSOR NOYES.
20. *Greek Drama for English Readers*.—Literary study of twelve or more dramas of Æschylus, Sophocles, and Euripides, in poetic translation; lectures on the Greek Theatre and on Greek Art. Second half-year, 3 hours. Open to Freshmen in case they have had English 2. Given in 1916-'17.—PROFESSOR NOYES.
38. *Journalism*.—News gathering, news writing, and news editing; practical field work, analysis of the news of the day; weekly stories. Second half-year, 2 class exercises, credit 3 hours. Omitted in 1918-'19.
31. *Business English*.—Themes; Supplementary reading. A practical course in the writing of business forms. First half-year, 3 hours. Given in 1919-'20.—Professor MOTTEN.
36. *English Drama before 1642*, exclusive of Shakespeare.—First half-year, 2 hours. Omitted in 1918-'19.
37. *English Drama from the Restoration to the Present*.—Second half-year, 2 hours. Given in 1916-'17 and alternate years. Prerequisite, English 36. Omitted in 1918-'19.
- Group V. Electives open only to Juniors and Seniors.
11. *Milton*.—Poetry and Prose. First half-year, 3 hours. Given in 1917-'18 and alternate years.—PROFESSOR PATTEE.
14. *Tennyson*.—First half-year, 3 hours.—PROFESSOR MOTTEN.
15. *Browning*.—Second half-year, 3 hours.—PROFESSOR MOTTEN.
21. *Introduction to Literary Criticism*.—Reading and discussion of nineteenth century essays, chosen to represent the most important types of criticism. First half-year, 3

hours. Given in 1916-'17 and alternate years. Omitted in 1918-'19:

22. *Outline History of Literary Criticism*.—Critical standards from Aristotle to Sainte-Beuve. Second half-year, 3 hours. Given in 1916-'17 and alternate years. Omitted in 1918-'19.
25. *Teachers' Course*.—Instruction as to methods, texts and references for teaching grade and high school classics. Practice teaching. Second half-year, 3 hours. Given in 1918-'19 and alternate years.—PROFESSOR MOTTE.

FORESTRY.

PROFESSOR TERRY.

During 1917-'18 Professor Terry has been absent as exchange professor at Harvard University, and the work of the Department of Forestry has been suspended.

1. *Forest Mensuration*.—The use and construction of log rules, and the determination of the contents of logs in board, cubic, and cord measure. Construction and use of volume and yield tables; methods of determining increment in diameter, height and volume and the contents of single trees and whole stands; the determination of the age of single trees and stands. Methods of making forest maps showing types and topography. The surveying and estimating of large tracts of timber in the Manitou Forest and Pike National Forest. Forest Service methods of making "Timber Surveys" are compared with other methods of timber cruising. Text-book: Graves' *Mensuration*. Cary's *Manual for Northern Woodsmen*, and *The Woodsman's Handbook*, published by the Forest Service, are used for reference. Lectures or recitations, and field work daily during the fall term.
2. *Dendrology*.—Monographic study of the important forest trees of the United States; their classification, identification, distribution, and silvical characteristics. During the fall, field trips will be taken to familiarize the students with the forest flora in the Manitou Forest and surrounding region. The distribution of forest types in this part

of the Rocky Mountains and the requirements of the species composing these types will be studied in their natural habitat. Lectures or recitations 5 hours, 6 hours of laboratory during the winter term.

3. *Wood Technology*.—The structural, mechanical, physical and chemical properties of wood, including timber-testing on Olsen and Riehle machines. The identification of the more important commercial woods. Both microscopic and gross structure are studied. Methods of wood-preservation. Lectures 2 hours and laboratory 4 hours during the winter term.
4. *Silviculture*.—The physical foundations of silviculture— influence of temperature, light, moisture, soils, and other site factors on forest growth. The principal silvicultural systems, both of natural and of artificial regeneration, and the adaptability of these systems to American conditions. Thinnings and improvement cuttings. Methods of artificial forestation; direct seeding, planting, and the management of forest nurseries; lectures 3 hours, and assigned readings during the winter term.
5. *Forest Protection*.
 - (a) *General Protection*.—Protection from fire, animals, and adverse climatic influences.
 - (b) *Forest Entomology*.—A study of the life histories and habits of insects injurious to forest trees and products. Identification and methods of control.
 - (c) *Diseases of Trees*.—Injuries to trees caused by parasitic fungi; also the causes and effects of wounds and the treatment of such injuries. The course includes a consideration of normal and pathological physiology. Field investigations of specific cases of injury by insects, fungi, and other agencies. During the fall and spring terms; lectures or recitations, 2 hours, and assigned readings during the winter term.
6. *Silvicultural Operations*.—During the spring term the students will receive practice in making thinnings and improvement cuttings, and in conducting other silvical in-

vestigations in the Manitou Forest. Experiments in different methods of direct sowing and planting will be carried on. Each student will prepare a planting plan for a portion of the Manitou Forest. Three or four weeks of the spring term will be spent in nursery work at the Forest Service Nursery at Monument, Colorado, under the direction of the Nursery Manager. (Monument is a half-hour's ride by rail from Colorado Springs.)

7. *Forest Improvement Work*.—The location and construction of forest roads, trails, bridges, telephone lines, fire lines, lookout stations, ranger stations, and other permanent improvement work on the National Forests, will be studied by lectures, assigned readings and inspection. Lectures, 2 hours during the fall term.
8. *Forest Management*.—The valuation of forest land, methods of regulating the yield, and the preparation and execution of working-plans for the management of forest property. The students will make a practical working-plan for a portion of the Manitou Forest, and from year to year each class will also help to execute the provisions of the general working-plan for the whole Forest. Lectures, field and office work daily during the fall term.
9. *Forest Utilization*.—The development of the lumber industry in the United States. Methods and costs of lumbering, milling, and marketing in the different forest regions. Minor forest products. Lectures or recitations 5 hours a week, and assigned reading during the winter term. Text book: Bryant's *Logging*.
10. *Forest Geography*.—The forest regions of the United States; detailed descriptions of the more important forest types and of commercial tree species; methods of silviculture and management; the National Forests; a few lectures on the forests of Canada, Alaska, the Hawaiian and Philippine Islands, and Mexico. The physiography of the United States will be considered with the forest regions. The meteorology and the climatology of the United States will be treated in a general way, especially in their relation to forest growth and distribution. Lec-

tures or recitations 5 hours a week, and assigned readings during the winter term.

11. *Forest Policy*.—History of the development of forest policies and administrative methods under the influence of economic and political conditions, forest legislation and administration of selected foreign countries; federal and state forest laws; the organization of the Forest Service and its administration of the National Forests. Forest taxation. Fernow's *History of Forestry* and *Economics of Forestry* are used for reference. Lectures or recitations 3 hours, and assigned readings during the winter term.
12. *Lumbering Operations*.—The Senior class will spend the spring term on some timber tract or tracts where extensive logging and saw-milling operations are in progress. They will study these methods in detail, considering the costs of the various operations, business organization and methods, efficiency of labor and of equipment. They will also estimate the timber and make a logging plan for the tract. The work will round out and complement the course in Forest Utilization and also afford additional practice in timber estimating.

GEOLOGY.

(The work of this Department for 1917-'18 is suspended.)

1. *General Geology*.—Prerequisite, Elementary Chemistry. Dynamical, Structural, and Historical Geology. Lectures, class discussions, laboratory work, and field excursions. The student, tho not required to do so, is advised to elect Mineralogy (Geology 2) and Zoology (Biology 1b) before taking Geology 1, or at the same time with it. Text: Chamberlin and Salisbury's *College Geology*. Each half-year, 3 hours.
8. *Introductory Course*.—This course is intended for students desiring an elementary knowledge in Geology, especially that of Colorado. It includes lectures, quizzes, field trips and laboratory work. Texts: Blockwelder and Barrows. First half-year, 3 hours.
2. *Blowpipe Analysis and Determinative Mineralogy*.—Pre-

requisite, Chemistry 2, first half-year. The course comprises instruction in the use of the blowpipe, in appropriate methods for the qualitative determination of the constituents of common minerals, and in the use of a few simple chemical and physical methods applicable to mineral analysis. Two laboratory periods of two hours one lecture or conference period per week, credit 3 hours. A laboratory fee of \$2.00 to cover the cost of minerals and chemicals will be charged.

GERMAN LANGUAGE AND LITERATURE.

PROFESSOR HOWE, AND MISS DOMINICK.

1. *Elementary Course*.—Grammar, Reading, Composition, Conversation. *Immensee; Germelshausen*; "direct method." Each half-year, 3 hours.
2. *Intermediate Course*.—Prerequisite, German 1. Selected texts in poetry and prose with instruction by the "direct method." Each half-year, 3 hours.
3. *Scientific German*.—Prerequisite, German 1. For Engineering and Forestry students. Each half-year, 2 hours.
4. *Composition and Conversation*.—Prerequisite, German 2. First half-year, 2 hours.
5. *Advanced Composition and Conversation*.—Prerequisite, German 4. Second half-year, 2 hours.
6. *German Lyrics and Ballads*.—Prerequisite, German 2. First half-year, 2 hours.
7. *Lessing*.—Prerequisite, German 4 or 6. *Emilia Galotti, Nathan der Weise*; biographical sketch. Second half-year, 2 hours.

ADVANCED COURSES.

8. *Schiller*.—Prerequisite, German 5. *Don Carlos, Wallenstein, Die Braut von Messina, Maria Stuart, Die Jungfrau von Orleans, Wilhelm Tell, Schillers Briefe (Auswahl), Philosophische Schriften (Auswahl), Aus d. n. schen Lesebüchern V, 2 and 3, Poems, biography of Schiller*. Conducted in German. Each half-year, 2 hours. Given in 1917-'18 and alternate years.

9. *Goethe*.—Prerequisite, German 5. *Die Laune des Verliebten*, *Die Mitschuldigen*, *Götz von Berlichingen*, *Die Leiden des jungen Werthers*, *Clavigo*, *Stella*, *Egmont*, *Ipfigenie auf Tauris*, *Torquato Tasso*, *Hermann und Dorothea*, *Faust*; *Gedichte* (Auswahl), *Briefe* (Auswahl), *Italienische Reise* (Rom); *Aus deutschen Lesebüchern* V. 1; Bielschowsky's *Goethe*. Conducted in German. Each half-year, 2 hours. Given in 1918-'19 and alternate years.
11. *The German Drama of the Nineteenth Century*.—Prerequisite, German 5. Kleist, Grillparzer, Hebbel, Ludwig; Gutzkow, Wildenbruch, Fulda; Sudermann, Hauptmann. Lectures in German. Especial attention will be given to the works of Kleist, Grillparzer and Hebbel. Conducted in German. Each half-year, 2 hours. Given in 1917-'18 and alternate years.
12. *Teachers' Course*.—Prerequisites, German 5 and at least one advanced course. A study of German pronunciation and grammar from the standpoint of the teacher. Instruction as to methods, texts, and works of reference. Each half-year, 1 hour.
13. *Current German Literature*.—Required of student's who major in German. Each half-year, 1 hour.
14. *Brief History of the German Literature from the Old High Period on*.—Prerequisite, German 5. Recitations on Stroebe und Whitney, *Geschichte der deutschen Litteratur*; reports and discussions on Scherer, *Geschichte der deutschen Litteratur*, and Francke, *History of German Literature*; Heydtmann-Clausnitzer, *Deutsches Lesebuch für Lehrerseminare I*. From Lessing on one or more works of the leading German authors will be read, and papers on the same presented and discussed in class. Conducted in German. Each half-year, 2 hours. Given in 1918-'19 and alternate years.
15. *The German Drama from Lessing to the Present Time*.—Knowledge of German is not necessary for the course; dramas will be read in English translation. One half-year, 2 hours. Given in 1918-'19.

GRAPHICS.

*ASSISTANT PROFESSOR MOORE, MR. ROBERTSON.

In the Freshman and Sophomore years, students are expected to devote more time to drawing than the number of hours assigned in the statements given below, but may do the extra work at such hours as suit their convenience.

Students in all engineering courses are expected to provide themselves with a good and complete set of drawing instruments—design and make to be approved by the instructor.

1. *Elements of Drawing*.—This course includes elementary exercises to develop facility in the use of the instruments, selected geometrical problems, cross-sections, shading with the right line and the bow pen, conventional representations, mathematical curves, cycloidal, and other motion curves, isometric, oblique and orthographic projections of standard letters, both free-hand and ruled, methods of spacing and laying out titles. First half, Freshman year, 6 hours, credit 2 hours. *Required of all Engineers.*
2. *Descriptive Geometry*.—The work consists of recitations from text-books and the graphic solution of problems. After the necessary elementary problems, special attention is given to the practical side of this subject, in its relation to stereotomy, pattern-making, sheet metal work, architecture, mine surveying, and machine drawing. First half, Freshman year, 1 hour, credit 1 hour; second half, Freshman year, 8 hours, credit 5 hours. *Required of all Engineers.*
3. *Machine Design*.—Includes recitations from text-books, the copying and tracing of machine drawings, drawing to scale from models and machine parts, working, detail, and assembly drawings, laying out tooth-wheel gearings, and the making of original working drawings from specifications. First half, Sophomore year, 4 hours, credit 2 hours. *Required of all Engineers.*

*Absent during the year 1917-'18.

4. *Graphic Statics*.—This course includes the study of forces, stresses, couples and moments of inertia, and is introductory to the later course on Theory of Trusses. Recitations from text-books are followed by the application of the principles in the solution of practical problems in roof trusses, involving permanent and temporary loads, snow loads, and wind pressures. Second half, Sophomore year; first half-term, 2 hours per week; second half-term, 4 hours per week; credit 2 hours. *Required of Civil Engineers.*
5. *Theory of Mechanism*.—The course consists of text-book recitations on theoretical mechanism, motion and interaction of machine parts, mathematical problems in machine design, tooth gearing, link motions, etc., with drawing of plates illustrating the practical application of the problems. Second half, Sophomore year; first half-term, 2 hours; second half-term, 4 hours; credit 2 hours. *Required of Electrical Engineers.*
6. *Forester's Course in Elements of Drawing*.—This course consists of exercises selected from the Engineers' Course, Graphics 1. It is intended to prepare and fit the Forestry students for the work of making and lettering maps. This course is a prerequisite for Civil 1, Civil 201, and Forest Mensuration. First half, Freshman year, 2 hours, credit 1 hour. *Required of all Forestry Students.*

GREEK.

PROFESSOR MIEROW AND MISS HALL.

1. *Elementary Course*.—Grammar, composition, and Xenophon's *Anabasis*. Designed to prepare a student to enter Greek 2 or Greek 8. Each half-year, 3 hours.
2. *Homer*.—Selections from the *Odyssey* and *Iliad* in the original, and the whole of both poems in translation; Plato, *Apology* and *Crito*; Herodotus, selections. Each half-year, 3 hours.
3. *Drama*.—Æschylus, *Prometheus* and *The Seven against Thebes*; Sophocles, *Antigone*; the remainder of Æschylus' and Sophocles' plays in translation; Euripides, *Al-*

cestis and *Medea*. Each half-year, 3 hours. Given in 1917-'18 and alternate years.

4. *History*.—Herodotus, the period of the Persian Wars, or Thucydides, the Sicilian Expedition. Parallel readings in modern historians. First half-year, 3 hours. Given in 1918-'19 and alternate years.
6. *The Lyric Poets*.—First half-year, 3 hours. Given in 1918-'19 and alternate years.
7. *A Course Designed for Teachers*.—Careful grammatical review; advanced prose composition; the intensive study of selected passages from the *Anabasis*. Second half-year, 3 hours. Given in 1918-'19 and alternate years.
8. *New-Testament Greek*.—Open to students who have had one year of Greek. Second half-year, 3 hours.
9. *Lucian*.—The reading of selected dialogues; a study of the life and thought of the second century A. D. Second half-year, 3 hours. Given in 1918-'19 and alternate years.
10. *An Introduction to the History of Greek Literature*.—A study of the several literary forms and the lives and works of the most important authors, together with the translation of substantial illustrative selections from the literature not previously studied by members of the class. Each half-year, 3 hours. Given in 1918-'19 and alternate years.

Greek History (History 7).—An outline of the political history of Greece with lectures, occasionally illustrated, on the literature and life. One lecture and one recitation each week. First half-year, 2 hours.

NOTE:—For a course in Greek Drama for English readers, see English 20; for the classical epic in translation, see English 2.

HISTORY.

MISS PARISH.

10. *General European History*.—From the Barbaric Invasions to the close of the Thirty Years War. Open to all stu-

dents and advised as the preliminary course in history. Each half-year, 3 hours.

1. *Modern European History*.—From the close of the Thirty Years War to the present time. Open to those who have had History 10. Each half-year, 3 hours.
3. *English History*.—A survey of the political and social history of England from the earliest time to the present. Not open to Freshmen. Each half-year, 3 hours.
13. *Constitutional History of England*.—A study of some phase of the development of the constitution of England. Open to those who have had History 3. First half-year, 2 hours. Given in 1917-'18 and alternate years.
14. *British Colonial History*.—A study of the expansion of Great Britain, and of her colonial policy. Open to those who have had History 3. Second half-year, 2 hours. Given in 1917-'18 and alternate years.
15. *The Renaissance*.—A study of the period of renaissance in Europe from the twelfth to the sixteenth century. First half-year, 2 hours. Given in 1916-'17 and alternate years.
16. *The Reformation*.—A study of the Protestant Reformation, from Wycliffe to the Council of Trent. Second half-year, 2 hours. Given in 1916-'17 and alternate years.

*PROFESSOR PARISH, MR. BEMIS.

2. *American History*.—A general course covering the entire period of American History. Not open to Freshmen. Each half-year, 3 hours.
12. *History of the West*.—A study of the exploration of the North American continent and the westward growth of the United States. Open to those who have had History 2. Each half-year, 2 hours. Not given in 1918-'19.
17. *United States History, 1783-1829*.—A special course in the period of the formation of the Union and the early development of the nation. Open to those who have had His-

*Absent on war service.

- tory 2. First half-year, 3 hours. Given in 1918-'19 and alternate years.
18. *United States History, 1829-1860*.—A special course in the Jacksonian Era and the period of slavery discussion. Open to those who have had History 2. Second half-year, 3 hours. Given in 1918-'19 and alternate years.
19. *Civil War and Reconstruction*.—A special course in the history of the United States from 1860-1876. Open to those who have had History 2. First half-year, 3 hours. Given in 1917-'18 and alternate years.
20. *Recent American History*.—A special course in the history of the United States since 1876. Open to those who have had History 2. Second half-year, 3 hours. Given in 1917-'18 and alternate years.
21. *Colorado History*.—A study of the history of Colorado and the Rocky Mountain region. Not open to Freshmen. First half-year, 2 hours. Given in 1917-'18 and alternate years.
22. *Teacher's Course*.—A study of the aims, materials, and methods of the teaching of history. Open to Juniors and Seniors who have had two years of history. Second half-year, 2 hours. Given in 1917-'18 and alternate years.
6. *General Survey*.—A survey of the entire field of history with the purpose of showing the unity and continuity of historical events and movements. Open to Juniors and Seniors who have had two years of history. Each half-year, 2 hours. Given in 1918-'19 and alternate years.
- MR. BEMIS.
23. *European International Relations Since 1870*.—Prerequisite, History 10, except by special permission of the instructor. The history of Europe. Emphasizing diplomatic and international phases, since the Franco-Prussian war. Designed to elucidate the more fundamental relations of the powers of Europe to each other, particularly the grouping of alliances and the conflict of international interests that preceded the outbreak of war in 1914. First half-year, 3 hours.

24. *The International Relations of the United States as a World Power*.—Prerequisite, History 10 or History 2, except by special permission of the instructor. The history of the United States since its entrance into the field of world politics, stressed internationally. Relations with Asia, the Americas, and Europe will be reviewed, with especial attention to the position of the United States in the world war. Meant to succeed History 23. Second half-year, 3 hours.

PRESIDENT DUNIWAY.

9. *Seminar Course in American or European History*.—Subject to be chosen at the beginning of the year. Open only to advanced students, and required of those majoring in history. Each half-year, 2 hours.

PROFESSOR MIEROW.

7. *Greek History*.—An outline of the political history of Greece, with lectures, occasionally illustrated, on the literature and life. One lecture and one recitation each week. First half-year, 2 hours.
8. *Roman History*.—A general survey of Roman political and literary history, one lecture and one recitation each week; occasional illustration with lantern slides. Second half-year, 2 hours.

LATIN.

PROFESSOR MIEROW AND MISS HALL.

1. Cicero, *De Senectute*, *De Amicitia*, *Selected Letters*; Horace, *Odes*.—Each half-year, 3 hours.

alternating with

101. A review of the essentials of Latin syntax; Selections from Roman Historical Literature (Sallust's *Catiline*, Letters of Cicero, and Livy's *Roman History*); Horace, *Odes*. Each half-year, 3 hours.
2. Horace, Selections from the *Satires* and *Epistles*; Terence, *Phormio*; Plautus, *Captivi*; Tacitus, *Germania* and *Agri-cola*; Pliny, *Selected Letters*. Each half-year, 3 hours.
6. *Latin Prose Literature of the Empire*.—A study of the lives

and works of representative authors. Each half-year, 3 hours. Given in 1918-'19 and alternate years.

7. Virgil, *Æneid*, Books VII-XII, selections from the *Eclogues*, and *Georgics*. First half-year, 3 hours. Given in 1918-'19 and alternate years.
8. *A Course Designed for Teachers*.—Careful grammatical review; advanced prose composition; the intensive study of selected passages from Cæsar and Cicero. Second half-year, 3 hours. Given in 1917-'18 and alternate years.
11. Ovid, *selected works*, with collateral readings on mythology. First half-year, 3 hours. Given in 1917-'18 and alternate years.
12. *The Hannibalic War*.—A study of the Latin sources, assigned readings in English. Second half-year, 3 hours. Given in 1917-'18 and alternate years.
13. *Latin Literature of the Republic*.—Selections from representative authors; lectures and collateral reading. First half-year, 3 hours. Given in 1918-'19 and alternate years.
14. Tacitus. *Annals* and *Histories*; lectures on the author's life, historical method, and style. Second half-year, 3 hours. Given in 1918-'19 and alternate years.
15. *The Private Life of the Romans*.—The reading of illustrative extracts in Latin; the discussion of papers prepared by members of the class; occasional lectures. Second half-year, 3 hours. Given in 1918-'19 and alternate years.

Roman History (History 8).—A general survey of Roman political and literary history; one lecture and one recitation each week; occasional illustration with lantern slides. Second half-year, 2 hours.

NOTE:—For a course on the classical epic in translation, see English 2.

MATHEMATICS.

PROFESSOR CAJORI, PROFESSOR ALBRIGHT AND MR. BARNHART.

- 1.**Algebra*.—Graphs; Variation; the Binomial Theorem; Undetermined Coefficients; Permutations and Combinations; Theory of Limits; Series; Theory of Equations. First half-year, 3 hours.
- 2.**Solid and Spherical Geometry*.—Planes and Lines in Space; Polyhedra, the Cylinder, Cone and Sphere; Spherical Triangles. Second half-year, 2 hours.
- 3.**Plane Trigonometry*.—Logarithms; the functions of one and two angles; inverse functions; the solution of triangles; De Moivre's theorem; simple applications. Second half-year, 3 hours.

PROFESSOR CAJORI.

6. *Calculus, Differential and Integral*.—First half-year, 3 hours. Second half-year, 4 hours.
7. *History and Logic of Mathematics*.—This course is planned especially for those who are fitting themselves to be teachers of mathematics. One half-year, 2 hours.
- 8.†*Projective Geometry*.—One half-year, 3 hours.
- 9.†*Theory of Equations*.—One half-year, 3 hours.
- 10.†*Differential Equations*.—2 hours.
- 11.†*Determinants*.—One half-year, 2 hours.
- 13.†*Vector Analysis*.—One half-year, 3 hours.

MR. BARNHART.

4. *Analytic Geometry (Elementary)*.—Plane loci of the first and second order. Higher plane curves. First half-year, 3 hours.
5. *Analytic Geometry (More Advanced)*.—More thoro study of plane loci; solid analytic geometry. Second half-year, 2 hours.

*Courses 1, 2, and 3 required of Freshmen.

†Of Courses 8, 9, 10, 11, and 13, only two are usually given in any one year.

NOTE.—For a course in Elementary Surveying, see Civil 1, p. 58.

PROFESSOR ALBRIGHT.

12. *Theoretical Mechanics*.—Prerequisite, Mathematics 6. This course is intended especially for students of engineering and mathematical physics. Each half-year, 3 hours.

MUSIC.

For courses in Music, including those counted toward a College Degree, see pp. 108-111.

PHILOSOPHY.

The required work in this department extends over the Junior and Senior Years, and gives the student a knowledge of the development of thought in the several departments of philosophy. The various seminary courses afford training in the study and discussion of important psychological, philosophical, and ethical questions.

PROFESSOR BREITWIESER.

1. *Psychology and Logic*.—Either Philosophy 1, or 2 and 3 required. Each half-year, 3 hours.

A. The first twenty-four weeks of the year are given to neurology and psychology, and the remaining twelve weeks to logic. The work of the first half-year includes the following topics.

- (a) Introduction to psychology and philosophy.
- (b) The anatomy and physiology of the nervous system as bearing on psychology.
- (c) Instincts, attention, habit-formation, sensation, and perception.

B. The second half-year is devoted to the remaining topics in psychology and to logic.

The satisfactory performance of a number of experiments is required. Outside assigned readings and the preparation of papers on special topics are also included. The equipment of the psychological laboratory (p. 123) is drawn upon for demonstration material.

2. *History of Philosophy*.—Either Philosophy 2 and 3, or 1 required. Open only to Juniors or Seniors. First half-year, 3 hours.

Lectures, Recitations, and Conferences.

(a) Greek Philosophy.

(b) Modern Philosophy. Lectures: (1) The Rise and Fall of Scholasticism; (2) The Beginnings of Modern Philosophy—Bacon and Descartes; (3) Spinoza; (4) Locke; (5) The Materialistic and Sensualistic Movements in France; (6) Leibnitz; (7) Berkeley; (8) Hume; (9) Kant, the Critique of Pure Reason; (10) Kant, the Transcendental Element in his Philosophy; (11) Hegel; (12) Spencer—The Philosophy of Evolution.

3. *Ethics*.—Either Philosophy 2 and 3, or 1 required. Open only to Juniors or Seniors. Prerequisite, Philosophy 2. Second half-year, 3 hours.

Lectures, theses, and discussions; the fundamental principles of ethics; Christian ethics; modern social and sociological problems; the ethical view of citizenship; a study of educational theories from an ethical standpoint.

PROFESSOR BREITWIESER AND ASSISTANTS.

9. *Experimental Psychology*.—A laboratory course. Experimental methods and typical experiments both qualitative and quantitative. Psychological tests and their applications to school problems. For the equipment of the laboratory, see p. 123. Laboratory fee, \$2.50. One hour recitation, laboratory hours to be arranged. Each half-year, credit 2 hours.—PROFESSOR BREITWIESER AND MR. GERLACH.

10. *Advanced Course in Psychology*.—Experimental work and reading from psychological literature. Open to students who have completed Philosophy 1. Each half-year, 2 hours.

11. *Mental Pathology and Hygiene*.—A study of normal and abnormal suggestion, fixed ideas, morbid-mindedness, insanity, hypnotism, hysteria, multiple personalities, faith cures, etc. Each half-year, 1 hour. Given in 1917-'18 and alternate years. Open to Juniors and Seniors.
12. *Psychology of Religion*.—Open to Juniors and Seniors only. Starbuck, James, Davenport, King, Ames, etc. The genetic and functional points of view in the interpretation of the religious consciousness. First half-year, 1 hour. Given in 1918-'19 and alternate years.
15. *Social Psychology*.—A study of various texts in social psychology, discussions, and selected readings. Second half-year, 1 hour. Given in 1918-'19 and alternate years. Open to students who have had Philosophy 1.
16. *Mental Tests, Retardation, Delinquency, etc.*—A study of the Binet-Simon and other tests; methods of testing; factors in retardation and delinquency. First half-year, 2 hours. Given in 1918-'19 and alternate years. Open to Juniors, Seniors and advanced students.

PHYSICAL EDUCATION.

Requirements for Men.

MR. ROTHGEB, DR. BLACKMAN, *MR. HICKOX, AND ASSISTANTS.

The required work in this Department extends over the first three years of the College course; during the Freshman year, 3 hours a week, credit 1 hour each half-year, and during the Sophomore and the Junior years, 2 hours a week, credit 1 hour each half-year. Twice each year, just after registration in the fall and again near the end of the second half, every man in the Freshman, Sophomore, and Junior classes, and all others who enter competitive sports are given physical examinations. In addition all Freshmen and such others as have indicated need of it in previous examinations are looked over carefully by the College Physician. In this medical examination, abnormalities of the body are noted, and conditions of external and internal organs ascertained, special care being given to heart and lungs. The medical exami-

*Absent on war service.

nations may be supplemented by special examinations at the desire of student or examiner.

On account of war needs, the requirement of physical training for men were suspended in the second semester of 1917-'18. This work is thus merged with required military instruction.

MR. ROTHGEB AND ASSISTANTS.

1. *Physical Education* (Elementary).—Required of all Freshmen. Elementary work in marching, calisthenics, gymnastic dancing, heavy apparatus, and games of the competitive type. A combination of the Swedish and the German systems, leading to correct carriage, muscular co-ordination, knowledge of gymnastic nomenclature and form, and an appreciation of the value of regular exercise. Each half-year 3 hours, credit 1 hour.
2. *Physical Education* (Intermediate Course).—Required of all Sophomores. A continuation of Course 1, with wider scope, more varied methods, and greater emphasis on correctness and readiness of response. Each half-year, 2 hours, credit 1 hour.
3. *Physical Education* (Advanced Course).—Required of all Juniors. A continuation of Course 2, with a view to affording basis from which students may carry on the direction of physical work in secondary schools. Each half-year, 2 hours, credit 1 hour.
4. *Competitive Sports, Intramural and Intercollegiate*.—Elective for all students meeting college requirements. Members of squads and teams who are excused from Courses 1, 2 or 3 for competitive sports must attain satisfactory proficiency in the sport elected and be regularly at practice.

Requirements for Women.

DR. BLACKMAN, MISS DAVIS.

The required work for women in the Department of Physical Education covers the Freshman, Sophomore, and Junior years. Three hours' work each week, credit one hour each half-year, is required during the Freshman and Sophomore years, and two hours' work each week, credit one hour each half-year,

during the Junior year. Medical and physical examinations are made on entrance and at the end of the second and third years, and records similar to those for the men are kept. Special exercise is prescribed for students showing defects of posture or physical inability to do the required amount of work. In the fall and spring, organized sports in the out-door gymnasium, managed by the Women's Athletic Association and under the direction of the instructor, take the place of the regular gymnastic work. From November 1st to May 1st one hour of dancing a week may be substituted for one hour of gymnastic work.

1. *Physical Education*.—Three hours a week. Gymnastics, sports.
2. *Physical Education*.—Two hours a week. Restricted Gymnastics.
3. *Physical Education*.—Special Gymnastics. Two hours a week.
4. *Physical Education*.—Preliminary ball room dancing. First half-year, 1 hour.
5. *Physical Education*.—
 - (a) Preliminary æsthetic dancing, 1 hour a week.
 - (b) Advanced æsthetic dancing, 1 hour a week.
6. *Physical Education*.—Folk dancing. Second half-year, 1 hour.

NOTE:—Full bloomers of dark blue serge and white sailor blouses are required. Short full skirts are required for out-door work. Ground Gripper gymnasium shoes are required.

PHYSICS.

PROFESSOR TILESTON.

1. and 2. *General Physics*.—This course is offered especially for students who do not expect to take the more advanced work of the department. The lectures will be illustrated by lantern slides and by experiments of historical interest. No prerequisites. Each half-year, lectures 2 hours,

recitation 1 hour, laboratory 3 hours, credit 3 hours. Laboratory fee, \$4.00 for the year.

3. and 4. *General Mathematical Physics*.—A study of the phenomena and laws of Mechanics, Wave Motion, Sound, Heat, Magnetism, Electricity and Light. This course is designed to furnish a working knowledge of the basic principles of Physics. It is planned especially for those students who expect to continue their technical studies in the fields of Engineering or advanced Physics. Prerequisites, Entrance Physics and Mathematics 1 and 3. Each half-year, 3 hours.
5. and 6. *Physical Measurements*.—Six hours of quantitative laboratory work each week, to accompany Physics 3 and 4. Laboratory fee, \$3.00 each half-year. Each half-year, credit 2 hours.
7. *The Teaching of Physics*.—A course intended for students expecting to teach physics in the high schools. Prerequisites, Physics 1 and 2, or 3 and 4. Each half-year, 3 hours.
8. *Precision of Measurements*.—The nature and methods of elimination of errors in experimental work. Required of all students in Physics 6. Second half-year, 1 hour.
9. *Theory of Light*.—Lectures or recitations, 3 hours, laboratory 4 hours. First half-year, 4 hours.
10. *Spectroscopy*.—Course 9 is continued with a study of the spectroscope, interferometer, concave and echelon gratings, the bolometer and thermopile. Lectures and recitations 3 hours, laboratory 4 hours. Second half-year, 4 hours.
11. *Electricity and Magnetism*.—Lectures, problems and recitations. First half-year, 3 hours.
13. *Electrical Measurements*.—A laboratory course to accompany Physics 11. First half-year, 2 hours.
14. *Modern Electrical Theory*.—A study of the classical experiments which establish the modern electron theory. Lectures or recitation, 3 hours, laboratory 4 hours. Second half-year, 4 hours.

15. and 16. *Physical Seminar*.—A seminar conducted for the discussion of the current periodical literature in Physics. Each half-year, 2 hours.
17. *Thesis*.—Credit arranged individually.

POLITICAL SCIENCE.

ASSISTANT PROFESSOR ELLINGWOOD.

1. *The Elements of Political Science*.—The nature, origin, and evolution of the state. The organization and operation of government. The purpose of the state. Freshmen not admitted. First half-year, 3 hours.
- 2.**The History of Political Theories*.—Prerequisite, Political Science 1. The development of political thought from earliest times. First half-year, Plato to Hobbes; second half-year, Hobbes to Austin. Textbook, and readings in Plato, Aristotle, Hobbes, Locke, Montesquieu, Rousseau, Bentham, Austin, etc. Each half-year, 2 hours. Open only to Juniors and Seniors.
- 3.**Comparative Government*.—Prerequisite, Political Science 1. A comparison of the constitutions and forms of government of the United States, England, Germany, France, and Switzerland. Textbook, and lectures. Each half-year, 2 hours. Open only to Juniors and Seniors.
- 4.**International Law*.—The general principles governing the intercourse of nations. Development of the idea of a *Ius Gentium*. Contribution of the United States to International Law. First half-year, the Law of Peace; second half-year, the Law of War. Each half-year, 3 hours. Open only to Juniors and Seniors.
- 5.**The History of American Diplomacy*.—Prerequisite, History 2. A survey of our foreign relations from 1776 to the present time. The development of our foreign policy, with emphasis upon the Monroe Doctrine. A special study of the more important treaties. Textbook, lectures, and collateral reading. Each half-year, 3 hours.

*Of Courses 2, 3, 4, and 5, not more than one will be given in any one year.

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- 6.†*American Government*.—Prerequisite, History 2. The origin, structure, and development of national, State, and local governments in the United States. One half-year, 3 hours.
- 7.†*English Government*.—Prerequisite, History 3. The nature, structure, and operation of English government as it is to-day. One half-year, 3 hours.
- 8.†*State Government*.—Prerequisite, History 2. The constitutional basis of the government of the States. The transition from territory to State. A special study will be made of the admission of Colorado, the formation and content of its constitution, and its development to date. One half-year, 3 hours.
- 9.†*American Political Theories*.—Prerequisite, History 2. The development of American political ideas from the Colonial period to the present time. Particular emphasis upon recent tendencies. Text-book and lectures. One half-year, 3 hours.

†Of Courses 6, 7, 8, and 9, not more than two will be given in any one year.

PUBLIC SPEAKING.‡

(The work of this Department for 1917-'18 is suspended.)

1. *Declamations*.—Voice culture; declamations; class work and individual training. Each half-year, 1 hour.
3. *Debates*.—Lectures; briefs; debates on social, economic, historical, and political questions. Second half-year, 2 hours.

‡See Oratorical and Debating Contests, p. 132.

ROMANCE LANGUAGES AND LITERATURES.

*PROFESSOR HILLS, **PROFESSOR STRUTHERS, ASSISTANT PROFESSOR MEUNIER, MISS BARRETT, MISS HARLAN, AND MR. BEMIS.

FRENCH LANGUAGE AND LITERATURE.

1. *Elementary Course*.—Fraser and Squair's *Shorter French Course*; Aldrich and Foster's *French Reader*; Fontaine, *En France*; Labiche et Martin, *le Voyage de M. Perri-*

*Absent during the year 1917-'18.

**Resigned at end of first half-year.

chon. Writing from dictation, and practice in speaking. Three divisions. Each half-year, 3 hours.

2. *Intermediate Course*.—Syntax and prose composition; oral work based on texts read; and the reading of books chosen from the works of the following authors: Corneille, Molière, Racine, Voltaire, Lamartine, Hugo, Mérimée, Gautier, Musset, Thiers, Balzac, Taine, Daudet, and Maupassant. Lectures. In this course French is the language of the class room. During the second semester. Two divisions. Each half-year, 3 hours.

Besides the books read in class several volumes will be assigned during the year in outside reading.

3. *Nineteenth Century Literature* (2 hours), and *Phonetics and Free Oral Composition* (1 hour).—Prerequisites, French 1 and 2. The following works will be read in class: Victor Hugo, *Hernani*, *Poésies* (extracts); Lamartine, *Méditations* (extracts); Alfred de Musset, *On ne badine pas avec l'amour*, *Poésies* (extracts); selected dramas and selections from prose fiction; Sainte-Beuve, *Selected Essays*; and parts of Lanson's *Histoire de la littérature française*. Lectures. Each half-year, 3 hours. Given in 1918-'19 and alternate years.

Outside Reading.—Each student is expected to read four of the following groups out of class, and pass examination upon them:

(1) Mme. de la Fayette, *la Princesse de Clèves*, and Saint-Pierre, *Paul et Virginie*; (2) Chateaubriand, *Atala* and *René*; (3) Lamartine, *Graziella*; (4) Victor Hugo, *les Misérables* (extraits), or *Notre Dame de Paris*; (5) Balzac, *Ursule Mirouet*, or *Eugénie Grandet*; (6) George Sand, *François le champi* or *les Maîtres sonneurs*; (7) Anatole France, *le Crime de Sylvestre Bonnard*; (8) Pierre Loti, *le Pêcheur d'Islande*; (9) Mæterlinck, *les Aveugles*, *l'Intérieur*, and *l'Oiseau bleu*; (10) Rostand, *Cyrano de Bergerac*, or *Chantecler*.

4. *Classical French Literature* (2 hours), and *Advanced Prose Composition* (1 hour).—Prerequisites, French 1 and 2. The following works will be read in class: Warren's

French Prose of the XVII Century; Corneille, *le Cid*, *Horace*; Racine, *Britannicus*, *Athalie*; Molière, *Tartuffe*, *les Précieuses Ridicules*; La Fontaine, *Fables*; Boileau, *l'art poétique*; and parts of Lanson's *Histoire de la littérature française*. Lectures. Each half-year, 3 hours. Given in 1917-'18 and alternate years.

Outside Reading.—Each student is expected to read several plays of Corneille, Racine, and Molière out of class, and pass examination upon them.

9. *The Comedies of Molière*.—Each half-year, 2 hours. Given in 1917-'18 and alternate years.
10. *French Drama*.—From the beginning of the nineteenth century to the present day. Each half-year, 2 hours. Given in 1918-'19 and alternate years.
8. *Old French*.—Clédat's edition of the *Chanson de Roland*. Each half-year, 1 hour. Open only to Juniors, Seniors, and graduates, who have had Latin and French 1, 2, and 3 or 4. Given in 1918-'19 and alternate years. Students whose major subject is Romance Languages will be expected to take either French 8 or Spanish 9.

NOTE.—In Courses 3 and 4, French is the language of the class room.

NOTE.—Courses 9, 10, and 8 are conducted in French. Students who take any of these courses are expected to have Lanson's *Histoire de la littérature française*, and an all-French dictionary (the *Littre-Beaujean* or the *Petit Larousse illustré*).

ITALIAN LANGUAGE AND LITERATURE.

1. *Elementary Course*.—Phelp's *Italian Grammar*; Bowen's *Italian Reader*; Goldoni, *Il vero amico* and *Un curioso accidente*. Each half-year, 2 hours. Given in 1917-'18 and alternate years. Students may not elect Italian 1 and Spanish 1 in the same year.
2. *Italian Literature*.—Dante, *Divina Commedia*. Lectures and collateral reading. Each half-year, 2 hours. Given in 1918-'19 and alternate years.

SPANISH LANGUAGE AND LITERATURE.

1. *Elementary Course*.—Hills and Ford's *First Spanish Course*;

Hills's *Spanish Tales for Beginners*; Alarcón, *El capitán Veneno*. Writing from dictation, and practice in speaking. Each half-year, 3 hours. Three divisions. Students may not elect Spanish 1 and Italian 1 in the same year.

2. *Intermediate*.—Syntax and prose composition; oral work based on texts read; and the reading of the following works: Hills and Reinhardt's *Spanish Short Stories*; Cervantes, *Don Quijote* (extracts edited by Ford); Hills and Morley's *Spanish Lyrics*. Lectures. In this course Spanish is the language of the class room. Each half-year, 3 hours.

For outside reading: Alarcón, *El escándalo*, *El niño de la bola*, *El sombrero de tres picos*; Blasco Ibáñez, *La barraca*; "Caballero," *La gaviota*, *La familia de Alvarada*; Isaacs, *María*; Palacio Valdés, *La aldea perdida*, *La alegría del capitán Ribot*; Pardo Bazán, *De mi tierra*, *Pascual López*; Pereda, *Don Gonzalo González*, *Pedro Sánchez*; Pérez Galdós, *Doña Perfecta*, *Marianela*, *Gloria* (2 vols.); Juan Valera, *Doña Luz*, *Pepita Jiménez*, *El comendador Mendoza*. Each student is expected to read two of these works out of class, and pass examination upon them. Other standard works, if approved by the instructor, may be read in the place of those given in this list.

7. *Spanish Literature of the Nineteenth Century*.—Each half-year, 2 hours. Given in 1918-'19 and alternate years.
8. *Spanish Literature of the Siglo de Oro*.—Each half-year, 2 hours. Given in 1917-'18 and alternate years.
9. *Old Spanish*.—Menéndez Pidal's edition of the *Cantar del mio Cid*. Each half-year, 1 hour. Open only to Juniors, Seniors, and graduates, who have had Latin and French, and Spanish 1 and 2. To be given in 1919-'20. Students whose major subject is Romance Languages will be expected to take either Spanish 9 or French 8.
10. *Spanish Teachers' Course*.—Prerequisites, Spanish 1 and 2, and at least one advanced course. Phonetics, review of

NOTE:—Courses 7, 8, and 9 are conducted in Spanish.

the elements of grammar, examination of texts, practice in teaching. Each half-year, 2 hours. Given in 1918-'19 and alternate years.

SHOP WORK.

The work in the shops is planned in order to give students the basis of modern manufacturing methods and organization, and to develop in them analytical and executive ability. Preliminary work to develop some skill in the use of the shop tools is followed by organized manufacturing work on a small variety of articles under the direction of the more advanced students. Planning and organization of manufacturing plants is studied through the medium of inspection trips and outside reading.

1. *Elementary Shop Work*.—Fundamental principles of pattern-making, forging, and machine work. Outside reading and shop exercises. More advanced work is given if the ability of the students warrants this. Required of all engineers.
2. and 3. *Manufacturing*.—In these courses the students do such direct labor as is required in the manufacture of tools, apparatus for the shop, and in making some articles of commercial use. First and second halves of second half-year, Freshman year. Two three-hour periods. Credit one hour each. Required of Electrical Engineers.
4. *Supervision and Executive Work*.—In this course the students do the work of foremen, routing clerks, production clerks, etc. Second half, Sophomore year, one three-hour period, credit one hour. Required of Electrical Engineers.
5. *Shop Organization and Planning*.—Inspection trips to various industrial plants about Colorado Springs and Colorado City showing good planning and more or less extensive division of labor. Students taking this course then plan the work to be done in courses 2, 3, and 4, deciding on the methods of performing the work in the most efficient ways and making such tools as will be required in this work. First half, Junior year. Required of Electrical Engineers.

FEES.

Shop 1, 4, and 5.....	\$4.00 each
Shop 2 and 3	2.00 “

COURSES FOR TEACHERS.

Courses will be arranged, on application, for teachers of the city at hours convenient for them, either late in the afternoon or on Saturday mornings. Such courses, if passed successfully, will be credited as college work.

Department of Music.

FACULTY.

CLYDE AUGUSTUS DUNIWAY, PH.D., LL.D.

24 College Place

President.

EDWARD DANFORTH HALE, A.M. 1424 N. Nevada Ave.
*Dean of the Department of Music and Professor of the Theory
and Literature of Music, and the Pianoforte.*

A.B. (Williams College) '80; A.M. (*ibid.*) '83; Professor at the
New England Conservatory, '85-'04; Colorado College, '05.

MRS. GEORGE MAXWELL HOWE.* 1811 N. Nevada Ave.
Instructor in Violin.

Cincinnati Conservatory of Music, '01-'03; Stanton College, Nat-
chez, Miss., '03-'05; Sternsches Konservatorium, Berlin, '05-
'06; Woman's College, Columbia, S. C., '06-'07; Colorado
College, '10.

HENRY HOWARD BROWN, 1716 Wood Ave.
Instructor in Voice Culture.

Pupil of E. W. Glover, Assistant Director Cincinnati May Festi-
vals, '00; J. A. Broeckhaven, '00-'01; James Sauvage, '01;
Dora Topping, '02-'04; Max Spicker, '03-'06; Amherst Web-
ber (coach of M. de Reszke, Mmes. Nordica, Eames, and
others), '05; Colorado College, '14.

DORA TOPPING BROWN (MRS.) 1716 Wood Ave.
Instructor in Public School Music.

Graduate in Music, State Normal School, St. Cloud, Minn., '88;
Supervisor of Music in Public Schools, St. Cloud, Minn.,
'88-'93; Student in Voice Culture, New York City, '95-'99;
Student in Piano and Composition, Philadelphia Institute
of Music, '99; Colorado College, '17.

EMMONS LUETSCHER. 1317 N. Weber St.
Instructor in Violoncello.

Pupil of Bruno Steindel, '10; Carl Brueckner, '11-'14; University
of Wisconsin, '12-'14; Colorado College, '16.

†ALEXANDER PIRIE, A.R.C.O. 632 N. Nevada Ave.
Instructor in Organ.

Pupil of T. H. Collinson, Mus. Bac. F.R.C.O., Edinburgh, Scot-
land, for Organ, Harmony and Orchestration, '04-'06; W.
Townsend, College of Music, London, England, for Piano,

*Absent on leave.

†Absent on war service.

'02-'04; Assistant Organist, The Cathedral, Edinburgh, Scotland, '07-'10; Assistant Organist to the Univeristy of Edinburgh, '07-'10; Associate of the Royal College of Organists, London, England, '07; Colorado College, '16.

MABEL MARGARET HARLAN, A.B. 1811 N. Nevada Ave.
Instructor in Violin.

Soloist's Diploma in Violin (Colorado College) '14; Instructor in Violin (Daniel Baker College, Brownwood, Texas) '14-'17; Colorado College, '17.

CLARIBEL FISCHER 731 N. Weber St.
Instructor in Music Education.

Colorado College and School of Music, '12-'16; New York City, '16-'17; Colorado College, '17.

ADMISSION.

To preparatory courses and to all special studies students are admitted without examination. *Pianoforte* PREPARATORY is a requirement for admission to *Pianoforte* (a).

COURSES OF STUDY.

1. *General Musical Culture*.—Outlines of musical notation, nomenclature and acoustics; musical structure, formal, harmonic, and contrapuntal; the symphony, the orchestra, and the orchestral score; the masterpieces of oratorio, opera, concerto, and other large forms; musical history, biography, and criticism. This course is designed to appeal to all classes of students; in particular, thru both concrete and imaginative treatment of the subject, to those who, for various reasons, cannot acquire the musical technique, but would be glad to give music a place in their culture scheme, to qualify themselves for intelligent criticism and appreciation of the art. Each half-year, 2 hours. Tuition, \$10.00 each half-year. Free to music students.
2. *Pianoforte: Preparatory*.—A course normally occupying three years, designed to qualify for admission to the Collegiate course. It may be pursued here or under accredited teachers. At the end of it the student is expected to show satisfactory knowldge of musical notation and elementary nomenclature; of all scales and arpeggios,

with the ability to execute them at a moderate tempo; and of the following literature or its full equivalent, including the musicianly performance by heart of a representative program chosen from it.

Bach: *The Magdalena Bach Clavecin Book*.

Haydn: *Sonatas*, G Major, 2-4, D major, 4-4 (moderato).

Mozart: The easiest sonatas in C major and F major.

Mendelssohn: The easiest numbers of the *Songs Without Words*, and *Kinderstuecke*, Op. 72.

Schumann: *The Jugendalbum*—the easier numbers.

Pianoforte: Collegiate.—Four years' course. Structural, memory, technical, critical and interpretative study of a schedule of pianoforte literature. The presentation of typical programs made up from this literature. Sight-Reading. Forming and maintenance of a répertoire. Study of Hale, Gow, Cutter, Goetschius, Grabill, Matthay, Breithaupt, Leschetizky, and other works on structure and technique.

3. *Composition, including original work, Counterpoint, Harmony, Form, Ear-training*.—Each half-year, 2 hours. Texts by Hale, Duncan, Goetschius, Spalding, Foote and Spalding, Chadwick, Hull.

4. *Orchestration*.—Each half-year, 1 hour.

5. *Violin: Preparatory*.—Studies for correct position of bow and violin; studies in the first five positions, exercises in shifting and indifferent styles of bowing. Double stops. Ensemble.

Violin: Collegiate.—

(a) All the positions. Studies by Mazas, Blumenstengel, Kreutzer, Sevcik.

(b) Studies by Kreutzer (second half), Rode, Stojanovits. Scale technic, concertos and classic pieces by the old masters as well as by composers of the Romantic School.

(c) Studies by Fiorillo, Gaviniés, Sevcik, Sauret. Concert pieces, sonatas, concertos.

Students are especially prepared for recital programs. A recital of technical and artistic merit must be given for graduation.

Orchestra practice once a week.

6. *Violoncello*.—Kummer, Grutzmacher, Dotzauer, Servais and others. Répertoire and ensemble from Bach, Beethoven, Schumann, Saint-Saens and others.
7. *Voice Culture*.—Vocalises; Songs; Standard English, American, German, French, Italian; Arias: Opera and Oratorio. Special training for church singing and chanting; correct speech for singing; sight-singing.

The final test for special course diploma embraces the musicianly performance, with mastery of voice, style, and interpretation, of an Italian and French aria, several English songs and German songs, a sight-reading test.

The final test for the full diploma: A musicianly performance, with mastery of voice, style, and interpretation of an entire song recital consisting of Italian, French, German, and English songs and arias, and a knowledge of one complete opera and one oratorio.

8. *Organ*.—No student will be admitted to the Organ School who has not had a course in piano amounting to, at least Course 2—Preparatory.

Preliminary Organ Work.—

Stainer's *Organ School*, Homer's *Pedal Technique*, Albrechtsberger's *Trios for The Organ*, and *Eight Short Preludes and Fugues* by Bach.

A graduated course combining the best organ works of ancient and modern composers; a knowledge of modern orchestral and piano works transcribed for the organ; training in adapting non-organ works for that instrument; and a knowledge of organ construction and history.

Candidates for diplomas, will be required to give an organ recital and to write a short paper on the construction of the organ, its history, composers and their work.

DIPLOMAS.

Students satisfactorily completing Courses 1, 2 or 5 or 6,

and 3a, b, c, d, together with a high school course or its equivalent, are entitled to receive the Diploma for Special Courses, except 3. Students specializing in Violin (Course 5) or Voice (Course 7) may substitute for Course 2 a satisfactory equivalent; but they must qualify in the requirements for admission to 2a (p. 108). The full diploma is awarded upon the completion of Courses 1, 2 or 5 or 6, 3 or 4; but students specializing in 5 or 6 must take at least 2a.

• SPECIAL COURSES.

Pianoforte, Violin, Voice the Orchestral Instruments, Counterpoint, Harmony, Composition, Orchestration, Public School Music. Students may enter these without examination, and pursue them for any desired period (but not less than one-half year or unexpired portion thereof). No credits are given unless some regular course be adopted later, in which satisfactory work done in the special courses will be permitted to count.

Through its weekly conferences conducted by the Dean, its course in General Musical Culture, its weekly recitals given by students and faculty, its Glee Clubs and Orchestra, the Department provides the free educational advantages which can be had only in a well organized school.

LESSONS.

The practice of musical technique is much too intricate and difficult to be adequately guided through weekly or semi-weekly lessons. The student ought to have the privilege of conference with his teacher whenever he is in difficulty, and the teacher ought to be able to see his pupil as often as, in his judgment, he needs assistance in his daily work.

This is the plan which this School of Music—with both practice and teaching rooms in the same building—has been able to adopt, and with the happiest results. It is practically a daily lesson scheme, and offers a great opportunity to the ambitious student.

NORMAL COURSE.

There is a growing demand in the secondary schools of Colorado and other states for teachers who, besides their liberal arts work, are competent to teach the pianoforte and the related

musical theory. This department offers a normal course designed explicitly to qualify young men and women to do this work. The course qualifies equally for the private teaching of Music. A Teacher's Diploma is granted students who satisfactorily complete the normal course.

MAJOR IN ART AND MUSIC.

Candidates for the degree of A.B. may obtain a major in Art and Music under the following conditions. They must take a minimum of eight half-year hours in music and the same amount in Art and Archæology. In addition six hours must be taken in one of these departments or divided among them. The remaining eight hours of the major shall be determined by the Committee on Individual Courses, in consultation with the major instructor. Music 1 (4 hours), Music 2 or 5 or 6, (2 hours—when taken in conjunction with courses 1 and 3) and Music 3 (4 hours, or 8 hours if taken a second year) and Music 4 (2 hours) are allowed to count toward this major.

EQUIPMENT.

The Department occupies the Perkins Fine Arts Hall, a beautiful College building of stone, erected in 1900, at a cost of \$37,000. It has at its command twelve class and practice rooms, a recital hall seating 100, and an auditorium seating 600, equipped with a Chickering concert grand piano and a Hutchings three manual pneumatic organ.

The Department is affiliated with The Institute of Musical Art of the City of New York, and with The New England Conservatory of Boston, and with Mme. Augusta Cottlow, of Berlin, Germany. Its standards are accepted in these cities precisely as those of Colorado College are at Harvard, Yale, and elsewhere.

TUITION.

Pianoforte, Voice, Violin, Violoncello, or Ensemble with Members of the Faculty—\$35.00 each half-year. Voice or Violin, 2 lessons weekly, \$50.00 each half-year.

Compositions (including Harmony and Counterpoint) or Orchestration—\$15.00 each half-year.

Orchestral Instruments—\$20.00 each half year.

General Musical Culture (free to Music students)—\$10.00 each half-year.

Public School Music—\$25.00 each half-year.

Practice: Pianoforte—one hour daily—\$3.00 each half-year.
Additional hours, \$2.00.

Practice: Organ—Estey pedal organ—\$5.00 each half-year.
Hutchings organ, \$10.00.

Academy of Fine Arts.

AFFILIATED WITH COLORADO COLLEGE.

FACULTY.

SUSAN FALKENBURG LEAMING. 1614 Wood Ave.

Associate Director of the Academy of Fine Arts (Affiliated).

Art Institute, Chicago, '90-'93; Instructor, Normal Department Art Institute, Chicago, '01-'03; Pupil of Arthur W. Dow, Teachers' College, New York City, '03; Art Director, Teachers' Training School, New York City, '03-'06; Director Art Department, Colorado Springs School, '17; Colorado College, '16.

CHARLOTTE LEAMING. 1614 Wood Ave.

Associate Director of the Academy of Fine Arts (Affiliated).

Albert Hester, New York City, '97; Frank Duveneck, Cincinnati, '98; Art Institute, Chicago, '98; Pupil of William M. Chase, New York City, '99; Instructor, Art Institute, Chicago, '99-'00; Academy of Fine Arts, Chicago, '09-'10; Colorado College, '16.

Students of Colorado College have the opportunity of enlarging their knowledge of the theory and practice of Art in the Colorado Springs Academy of Fine Arts, which is located in Perkins Hall and is affiliated with the College. The work of the Academy has been accredited by the Art Institute of Chicago and the Teachers' College of New York. Practice work is offered in Life, Still Life, Design and Composition, and there are lecture courses as follows:

1. *Theory and Practice of Art.* Each half-year, 1 hour.
2. *Composition.* Second half-year, 1 hour.
3. *Design.* First half-year, 1 hour.
4. *Artistic Anatomy.* Each half-year, 1 hour. Given in 1918-'19 and alternate years.

A two years' Normal Course leading to a diploma in Fine Arts is offered by the Academy. Students taking this course are required to take Art 2, 3, and 4, and Education 1 and 4 in Colorado College.

College credit is allowed for courses 1, 2, and 3; and College

students majoring in Art may also receive credit to the amount of two half-year hours for practice work as described above.

TUITION.

Practice Work.

	First Semester	Yearly Rate
Five lessons a week.....	\$65.00	\$125.00
Four lessons a week.....	\$55.00	\$105.00
Three lessons a week.....	\$45.00	\$ 85.00
Two lessons a week.....	\$35.00	\$ 65.00
One lesson a week.....	\$20.00	\$ 35.00

Lecture Courses, One Semester—\$5.00 Each.

Students taking one lesson a week are entitled to Lecture Course 1 or 2; twice a week, to Lecture Courses 1, 2 or 3; three or more times a week, to full Lecture Courses free of charge.

N. B.—Matriculation in the College is necessary to obtain College credit.

General Information.

LOCATION.

Colorado College is fortunate in its environment. Colorado Springs, the county seat of El Paso County, and the third largest municipality of the commonwealth, is remarkable for its history and character, and is admirably adapted to be the seat of a college. Founded in 1874, under the direction of men of shrewd foresight and broad views, it has maintained from the beginning high standards of morality and culture. Saloons and the attendant destructive influences are absent. Radiating railroad systems and neighboring gold fields have fostered its wealth. Many visitors are attracted hither, both pleasure seekers and health seekers, but the latter are so far outnumbered that the place has none of the depressing influences so often observed at noted health resorts. The lover of nature might seek far before finding a spot more favored. The mountains are close at hand, their serrated outlines occupying about one-third of the horizon. In the center of the range, less than a dozen miles away, stands Pike's Peak. Its summit is reached by a cog railway, by bridle paths, and by an automobile road. About its base are many cañons, and in one of these, around a celebrated group of mineral springs, is the city of Manitou. The climate of Colorado Springs has attained a world-wide reputation by reason of the dryness and rarity of the air, and the opportunity for outdoor exercise afforded by the great number of fine days (helpful in cases of malarial disease, asthma, and incipient phthisis). Students unable to work in other climates may here continue their studies, while at the same time making a permanent gain in health.

BUILDINGS.

The buildings of the College are situated on a tract of about 50 acres, in the heart of the best residence portion of the city. All except the building containing the shops are of stone. Heat and electric light are furnished to all from a central plant.

PALMER HALL, completed in the fall of 1903 at a cost of \$287,000, contains laboratories and general lecture rooms. The style of architecture is that which has been chosen for the entire system of buildings eventually to occupy the College reser-

vation, and, like the Library and Perkins Fine Arts Hall, it is built of the "Peachblow" sandstone. The structure is fire proof. On the first floor are laboratories for Chemistry, Physics, Mining, Metallurgy, and a large demonstration room. On the second floor are general lecture rooms, and other laboratories for Chemistry. Near the head of the west stairway is a large bronze tablet, dedicated to the late General William J. Palmer by the survivors of the 15th Pennsylvania Cavalry. The third floor contains the laboratories for Biology, Geology, and Mineralogy, general lecture rooms, and a large, well-lighted Museum for the natural science collections of the College. The building was equipped at a cost of \$50,000.

THE PERKINS FINE ARTS HALL, named for one of the principal donors, the late Willard B. Perkins, of Colorado Springs, was completed in 1900. It is a two-story stone building, and cost \$37,000. The lower story is a large auditorium, seating 600, in which the chapel exercises are held and concerts and lectures are given. This room contains a valuable pipe organ, given by Miss Elizabeth Cheney, of Boston, Mass., in memory of her brother, Charles P. Cheney. The upper story contains the lecture and practice rooms of the Department of Music, and the College Art Gallery. For a description of the Art Collection, see page 120.

THE LIBRARY, given in 1894 by the late N. P. Coburn, of Newton, Mass., and costing \$50,000, is of great architectural beauty and admirably adapted to its purpose. A full size cast of the "Winged Victory" of Samothrace, stands at one end of the main hall. In recesses are casts of the Hermes of Praxiteles and of Mercie's David. Mr. A. L. Dickerman's collection of rare Indian curiosities adds to the interest of the room.

THE ASTRONOMICAL OBSERVATORY is the gift of Henry R. Wolcott, of Denver, and was completed in 1894. Besides the dome room it contains a lecture room, a transit room, and a photographic dark room.

THE SHOPS. Two buildings contain the dynamo room and the shop for carpentry, forging, and machine work.

THE PRESIDENT'S RESIDENCE, at the northern boundary of the campus, was purchased in 1888, and remodeled in 1903.

CUTLER HALL (Engineering Building), the oldest building on the campus, was first occupied in 1880. It contains recitation rooms, and electrical and hydraulic laboratories.

COSSITT MEMORIAL. Through the generous gift of \$110,000 by Mrs. A. D. Juilliard of New York, a Men's Building has been erected. It was dedicated in June, 1914. It contains a finely equipped gymnasium, a stadium, reading rooms, dining hall, and a common room, and is the center of the athletic and social life of the men of the college. The building was given by Mrs. Juilliard in memory of her father, and is called The Frederick H. Cossitt Memorial Hall. The dining hall is under the management of Mrs. B. H. Paine.

THE ADMINISTRATION BUILDING, formerly a residence, was presented to Colorado College in the summer of 1914. It adjoins the College campus, and provides convenient quarters for all the offices of administration.

THE UTILITY BUILDING, erected in the summer of 1914, overlooking Washburn Field, contains the Electrical Engineering Laboratory.

COLLEGE RESIDENCES.

HAGERMAN HALL, built in 1889, is used as a home for young men. Besides the students' rooms, it contains a large social room provided with piano, games, and magazines. On the roof and in the office of the Weather Bureau are the Meteorological Station instruments.

MONTGOMERY HALL was erected and furnished in 1891 by the Woman's Educational Society, and presented to the College. It provides a comfortable home for young women, and contains the rest room under the charge of the Young Women's Christian Association, for the use of all young women of the College.

TICKNOR HALL, the gift of Miss Elizabeth Cheney, was opened as a home for young women in 1898. Besides students' rooms, it contains an infirmary capable of complete isolation. The infirmary is open to all young women living on the campus, and is in charge of a trained nurse, whose services, whether in the infirmary or in the students' rooms, are paid for by an annual fee, due in September, of \$5.00 from each young woman.

MCGREGOR HALL, a commodious and convenient building, was opened in 1903 as a third residence for young women. It contains a fully equipped gymnasium.

BEMIS HALL, the center of the social life of the whole college, was opened in September, 1908. In it, besides rooms for young women, are the offices of the Dean of Women, a spacious Common Room, a large dining hall with an open wood roof after the manner of the English halls, and the Cogswell theatre for college dramatics.

LIBRARY.

MANLY DAYTON ORMES, LIBRARIAN.

The Library building has been elsewhere described (p. 117). In it are, altogether, about 73,000 volumes and 40,000 pamphlets. Twenty-five hundred volumes are in the Engineering Library. The leading literary and scientific journals are received, as are also the United States Government publications and those of the State of Colorado. Of United States documents the library now has about 10,000 volumes, including the records of Congress complete from 1847, and many valuable records for the period 1774-1847.

The engineering library is located in a large-room 60 feet by 30 feet in the basement of the N. P. Coburn Library building. It contains 2,500 volumes on technology. This library has a complete set of the Engineering Record (formerly called the Sanitary Engineer), and Van Nostrand's Engineering Magazine; one hundred and seven volumes of the Minutes of the Institution of Civil Engineers of Great Britain; the recent volumes of the Engineering Magazine, Cassier's Magazine, Engineering News, Engineering and Mining Journal, Technical World, Electrical World, Mineral Industry, Electrical Engineer, Electrical World and Engineer, Electrician (London), Electric Journal, Technology Quarterly, Municipal Engineering, American Machinist, the current numbers of Mining Science, Metallurgical and Chemical Engineering, Engineering Index, Chemical News, and Journal of the American Chemical Society; the recent transactions of the American Institute of Electrical Engineers, and the American Society of Civil Engineers. A complete set of the Scientific American and Scientific American

Supplement, of the American Journal of Science, and the current numbers of other leading periodicals on pure science and mathematics, are kept in the main room of the Coburn Library. The engineering library has also the reports of the State Engineers, the United States Geological Survey, the United States Coast Survey, the Chief of Engineers and the Chief of Ordnance, U. S. Army, as well as the United States publications on Irrigation.

THE COBURN LIBRARY BOOK CLUB, organized in 1897, provides its members with the best new books, which are given to the Library after two years. The fee is \$5 a year or \$3 for six months. Members enjoy the full privilege of the Library. The Club has purchased 4,000 books, of which 3,700 have already been given to the Library.

The Wednesday Art Club and the local chapter of The Daughters of the American Revolution have started collections of books on their special topics.

A reading room is provided with the current literary and scientific magazines, as well as a number of leading newspapers.

In Room 44 of Palmer Hall are about 300 volumes, given to the Classical Department by Mrs. M. C. Gile, to form the beginning of a department library for Greek and Latin.

ART COLLECTIONS.

The College Art Gallery on the upper floor of Perkins Fine Arts Hall contains several valuable paintings by famous artists. Among these are a portrait of General William J. Palmer, by Herkomer, a portrait of President Emeritus W. F. Slocum, by Alexander, and a portrait of the late Professor Ahlers, by Benson. The portrait of President Emeritus Slocum was presented at Commencement, 1913, by friends of the College, in celebration of his quarter-centennial of service.

A bronze statue of the Flying Mercury, presented by James F. Burns, and marble busts of Antinous and Dante are placed in this room.

In the Art Room of Palmer Hall, where the classes in Art and Archæology meet, there is hung a fine collection of large carbon photographs. These reproductions of famous works of art in the European Galleries are from the firm of Braun, Clé-

ment in Paris. The cabinets in the Art Room contain over 2,000 mounted photographs illustrating the History of Architecture, Sculpture, and Painting thruout the ages. In addition the Classical Department owns several hundred fine lantern slides used as illustrative material for courses in Greek and Roman History, Classical Mythology, and Archæology.

LABORATORIES AND APPARATUS.

BIOLOGY.

THE BIOLOGICAL LABORATORIES are nine rooms on the second floor of Palmer Hall. In these, each student is assigned a desk, and in courses requiring microscopic observation is furnished with a microscope for which he is held responsible. There is an abundant supply of all kinds of glassware necessary for the various courses, also micrometer eye-pieces, cameras, dissecting microscopes, paraffine baths, microtomes, life-boxes, and charts. For the courses in Zoology, Comparative Anatomy, etc., a number of mounted and disarticulated skeletons and anatomical models are provided. A large amount of the museum material is also available for illustration. The physiological laboratory is supplied with the Harvard apparatus and such pieces as the sphymograph, cardiograph, stethoscope, sphygmomanometer, hæmocyto-meter, hæmometer and Gower-Haldane hæmoglo-binometer, Lombard's modification of Mosso's ergograph, and spirometer.

The equipment for Bacteriology includes incubators, Arnold steam sterilizers, autoclav, hot-air sterilizers, Becker balance, Trøemner media scale, centrifuge, animal holders, culture jars, water sampling apparatus, inoculating water baths, counting apparatus, and other appliances essential to the work. For botanical courses clinostats, auxinometers, and a variety of smaller apparatus are provided.

THE HERBARIUM occupies a room in the Biological Department. The nucleus consists of a Colorado herbarium purchased from Marcus E. Jones, and later enlarged. The larger part of the present collection is the Edward Tatnall herbarium, presented to the College by Miss M. H. Tatnall, of Elmira, N. Y. This collection, of about 22,000 species and varieties, includes representatives of all the great plant groups. Of these there

are some 900 Algæ, 1,700 Lichens, 2,000 Bryophytes, 1,050 Pteridophytes, and 16,350 Angiosperms. These specimens, carefully and fully labeled, were collected in 23 different states, Canada, Sweden and England, by 65 collectors. A catalog makes the herbarium especially valuable.

CHEMISTRY.

THE CHEMICAL LABORATORIES include: (1) The General Laboratory; (2) the Qualitative Laboratory; (3) the Quantitative Laboratory; (4) the Organic Laboratory; (5) the Assay Laboratory; (6) Laboratories for gas and fuel analysis—spectroscopic and polariscopic work—biochemical analysis—photographic operations—balance room, etc., each furnished with adequate and appropriate appliances for general and research work.

GEOLOGY.

The general laboratory is provided with five large models and relief maps for the illustration of river work, glaciation, and vulcanism, together with a complete set of the geological folios of the United States Geological Survey, and more than 1,000 topographic maps. Suites of rock specimens are provided, covering all the main types of the igneous, sedimentary, and metamorphic rocks, as well as representative specimens from important mining districts in Colorado. A carefully prepared collection of thin sections of rocks is available for microscopic study, covering the varieties of the igneous rocks and illustrating their mineralogy. Seibert petrographic microscopes are provided.

In the mineralogical laboratory a general collection of 175 minerals illustrates the crystal forms and the variations in the massive kinds. Each student is given a working collection. Crystallography is taught by means of 150 models of crystals in wood and by the aid of a small collection of transparent models.

For the work in paleontology the collections of fossils in the College museum are employed, together with the departmental collection. They are representative of a large number of the genera in the several classes of invertebrates, and also of many of the extinct vertebrates.

PHYSICS.

The laboratories in Physics are located on the first floor and in the basement of Palmer Hall. The lecture room is equipped with a Bausch and Lomb Convertible Balopticon for the projection of transparent slides and the reflection of opaque objects. The apparatus for experimental demonstration purposes is especially complete.

The main laboratory in general Physics has equipment represented by the experiments of Millikan's "Mechanics, Molecular Physics, and Heat," and Milliken and Mills' "Electricity, Sound, and Light."

A photometer room with a Lummer-Brodhun photometer and a three-meter track is adjacent to the general laboratory. There are also a well equipped photographic dark room, a laboratory for work in optics, and a room for advanced experimental work. The equipment of the Electrical Engineering Department is available for advanced work in Electricity.

PSYCHOLOGY.

The equipment includes the following: Azoux dissectible model of human brain; Deyrolle "*Deux Demi-Tete*," showing distribution of cranial nerves; Deyrolle model of the spinal cord in cross section, much enlarged; Deyrolle model of the cord *in situ*, showing connections with the sympathetic system; lantern slides of gross and microscopic structure of the nervous system. Models of the sense-organs are available from the Department of Biology, and cranial casts and crania of various races and animals from the Musuem.

The laboratory contains all the apparatus for courses in experimental psychology, special apparatus for intelligence tests, and for research work.

In addition to the regular equipment of the laboratory, the department of psychology has a shop equipped with a South Bend lathe, wood-working, metal working, jewelers' and watch-making tools. The shop is used for the repairing of apparatus, the building of new apparatus and for making special pieces needed in research work.

THE SHOPS.

The shops have line shaft drive, power being obtained from an electric motor, or steam engine. A supply of compressed

air may be used for pneumatic tool work, gas furnaces, or cleaning. Tools are kept in a central tool room in charge of an assistant.

1. *Wood Shop*.—The wood shop is equipped for all bench work and speed lathe work in making patterns. Equipment is also provided to mould such patterns as are made. Power tools are driven from line shaft.
2. *Forge Shop*.—The forge shop provides facilities for all hand forging of iron and steel. Blast for the forges is furnished by a power-driven blower.
3. *Machine Shop*.—Machine shop equipment includes engine lathes, universal milling machine, planer, shaper, universal tool grinder, and a large assortment of attachments. The small tool equipment is kept in the tool room.

CIVIL ENGINEERING LABORATORIES.

1. *The Testing Laboratory* contains a Riehle Universal Testing machine of 100,000 pounds capacity, completely equipped for testing all kinds of materials of construction, and an abrasion machine for testing paving materials. Both machines are motor driven. The accessory apparatus includes a Henning extensometer and an Olsen compression micrometer, each instrument reading to one-ten-thousandth of an inch.
2. *The Cement Testing Laboratory* in the basement of Cutler Hall is equipped with a Fairbanks testing machine, Vicat indenting apparatus, sand and cement sieves, briquette moulds, cube and cylinder moulds, Gilmore's needles, running-water, storage tanks, and other apparatus requisite for investigations in the nature and physical properties of cement, cement mortars, and concrete materials.
3. *The Hydraulic Laboratory* is in the basement of Cutler Hall. The equipment includes a 1,500 gallon tank with weir notch; rectangular, trapezoidal and triangular weirs of various sizes; a complete installation for the determination of hydraulic constants of flow thru orifices and short tubes; a 3-inch Venturi meter and four displacement meters of different types; a hydraulic ram installation; pres-

sure gauges and differential gauges, thermometers, etc.; as well as portable weighing tanks and scales. To further illustrate the principles of hydraulics and power application there is a 9-inch Leffel turbine in a cast iron case, and a small centrifugal pump operated by a 12-inch Doble impulse water motor.

4. *The Blue Print Room* is on the third floor of Cutler Hall. It is equipped with daylight printing frames for making blue prints or blue line prints up to 30x42 inches in size, and suitable facilities for washing and drying the prints.

SURVEYING.

The Department possesses a complete working equipment of engineer's field instruments, including twelve modern transits, five wye and three dumpy levels, four surveyors' compasses, a U.S.G.S. plane table outfit complete, a U.S. Navy pattern sextant and an abundance of chains, tapes, rods, and other accessory equipment.

Summer School of Surveying.—Field work in surveying is done under exactly the same conditions that prevail in actual practice. This work is carried on at a continuous exercise of four weeks' duration at Manitou Park, immediately after the close of the regular College exercises, at the end of the Freshman and Junior years. The work is done under the direction of the head of the Civil Engineering Department and a corps of experienced assistants.

The College furnishes living accommodations for the students. Students provide their own bedding.

ILLUSTRATIVE APPARATUS AND MATERIAL.

Lantern Slides, Photographs, and Trade Catalogs.—The Department has a representative collection of lantern slides on steam engineering, machine design and electrical engineering, and blue prints, photographs and department drafting rooms contain complete reference files of catalogs and blue prints pertaining to their special engineering branches, which are freely used in connection with those courses requiring design work.

Geometrical Models and Balopticon.—For illustrating subjects

in descriptive geometry and graphics there are in the drafting room a number of models prepared by students, including half a dozen thread models of ruled surfaces, bridge trusses, and machines. In the mathematical classroom there are a number of models of wood and plaster of Paris. The Department also has a Bausch and Lomb Balopticon of the latest pattern, by means of which photographs, cuts from magazines and newspapers, and any small drawing, up to 5x7 inches in size may be projected directly upon the screen without the necessity of having lantern slides made.

ELECTRICAL ENGINEERING LABORATORIES.

1. *The College Power Plant* is available for the purposes of the Electrical Engineering Department. The plant has four G-E compound-wound 115-volt direct current generators with a total capacity of 110 kilowatts.
2. *The Electrical Engineering Laboratory* has eight direct current dynamos, ranging in size from 1 kilowatt to 20 kilowatts, giving a range of type and capacity for a good laboratory demonstration of fundamental principles and commercial methods of test. The alternating current machinery consists of a rotary converter, four synchronous dynamos, two induction motors, a series motor, and ten transformers, ranging from 5 to 15 kilowatts in capacity. For making measurements there is about two thousand dollars' worth of the best types of direct or alternating current voltmeters, ammeters, wattmeters, shunts, and instrument transformers. These instruments are calibrated in the Electrical Testing Laboratory.
3. *The Electrical Testing Laboratory* has a very good equipment for the measurement of resistances, inductances, and capacities, for the determination of magnetic properties of iron, and for the calibration of direct and alternating current measuring instruments.

THE MANITOU FOREST—A FIELD LABORATORY IN FORESTRY.

The Manitou Forest is a tract of 6,000 acres, situated twenty-seven miles from Colorado Springs and about eighteen miles north of Pike's Peak. It is reached by the Colorado Midland

Railroad to Woodland Park, twenty miles, and then by stage, seven miles. It is within the boundaries of the Pike National Forest. Camp Colorado, a group of cottages used in conjunction with the School of Engineering, makes a most convenient and homelike center for the field courses.

The Forest is under the direct supervision of the School of Forestry. It affords unusual opportunities for study and practical experience in the field. This tract has a good stand of Western Yellow Pine and Douglas Fir. Much of the timber is mature, and logging and milling operations are now being carried on. The students are given opportunity, under the direction of the Forestry Department, to take part in all the phases of the treatment and management of the forest.

The College has a good working equipment of axes, saws, calipers, surveying instruments, meteorological instruments, and such other apparatus as is needed in the study and care of the forest.

OBSERVATORY AND METEOROLOGICAL STATION.

THE OBSERVATORY has a telescope of four-inch aperture, presented by Mr. Henry R. Wolcott, of Denver, and a sidereal clock, given by the late Charles S. Blackman, of Montreal, Canada. The College Meteorological Station, now in Hagerman Hall, is well equipped with recording instruments. The largest of these instruments, the quadruple register, given by the late General William J. Palmer, records minute by minute the direction and velocity of the wind and the sunshine and rainfall. In shelters are instruments for measuring and recording temperature and humidity. A Draper barograph, given by the late Dr. S. E. Solly, affords a continuous record of the atmospheric pressure. In Coburn Library are bound records of the beginning of the meteorological library, valuable accessions to which have been received from the late General Palmer.

Special information has been furnished on request to the city engineer and to several railway companies, while tabulated statements of the current weather are supplied regularly to the local newspapers, to the city health officer, and thru the Chamber of Commerce, to various applicants at home and abroad who desire them for publication.

MUSEUM.

EDWARD ROYAL WARREN, DIRECTOR.

The Museum is on the second floor of Palmer Hall. Glass showcases extend to all sides of the room. The central part is taken up with the larger specimens. The megatherium stands in the west half, and the mounted skeleton of a whale occupies the eastern portion. Grouped around them are the large natural history specimens, casts of noted fossils, and at intervals are showcases for small specimens.

The foundation of the Museum was laid by the gift of Winfield S. Stratton.

PALEOBOTANY is represented by two cases of Carboniferous, Cretaceous, and Oligocene plant remains classified by Mr. Baker.

PALEONTOLOGY.—Several cases are given up to the display of the invertebrate fossils, which are zoologically arranged. The collection contains typical and rare forms of foraminifera, corals, crinoids, brachiopods, mollusca, and arthropoda. The mollusca and echinoderms collected by Prof. Cragin are for the most part from the lower Cretaceous. The mollusca from the Atlantic slope, presented by Prof. Wm. B. Clark of Johns Hopkins University, are chiefly Tertiary. Besides an excellent geological record, the collection contains a series of casts of noted specimens.

The foundation for the collection in vertebrate paleontology was laid by the purchase for the college of the large paleontological cabinet of Prof. Cragin by General Wm. J. Palmer and the Colorado Springs Company. This collection consists of some 8,000 specimens from Colorado, Kansas, Indian Territory, Texas, and other states, and includes remains of Pliocene horses, llamas, Miocene rhinoceroses and mastodons, Cretaceous saurians, and tertiary fishes. It is of importance not only as supplying a large part of the geological record not otherwise represented in the Museum, but also as containing the types of many new species and some new genera of fossils. Among these type fossils the most important is the large plesiosaurian reptile *Trinacromerum*, the type of a new genus and species described from the Cretaceous of Kansas in 1888. Another valuable item of the collection is the extensive series of casts of fossil verte-

brates given by W. S. Stratton. These casts include such forms as the *Ichthyosaurus*, *Archæopteryx*, *Glyptodon*, *Dinotherium* head, *Elephas* heads, *Mastodon* head and tusks, *Megatherium*, and restorations of the *Colossochelys*, *Plesiosaurus*, *Mammoth*, and other forms.

ZOOLOGY.—The collections of Invertebrate Zoology occupy a series of table cases along the south side of the room. They comprise representatives of the different groups, such as the Protozoa, *Cœlenterata*, *Mollusca*, etc. These have been recently rearranged and provided with descriptive labels which it is hoped will be found useful to students.

A representative series of the *Myxomycetes* or *Mycetoza* of Colorado, collected by Dr. Sturgis and Mr. Ellsworth Bethel, have recently been added to these collections, and Professor Schneider has presented a large series of the Butterflies and Moths of Colorado mounted in Denton tablets.

Vertebrates are well represented by the large natural history collection received thru the generosity of W. S. Stratton. It contains 29 species of fishes, among which are the blue-shark, a few ganoids, and several curious tropical forms. Among the 23 species of reptiles, the most important are the Indian crocodile, python, iguana and the gila monster. The collection includes 442 species of birds, including such interesting forms as the ostrich, cassowary, Australian crane, apteryx, and Argus pheasant. The ornithology of all parts of the world is represented by the more striking forms. The mammals number 170 and include a group of mounted orangutans, a group of all known genera of marsupials, the Indian elephant, rhinoceros, nyghau, polar bear, and a complete mounted skeleton of a large whale.

Thru the generosity of General Wm. J. Palmer, the Museum has acquired the unrivalled collection of Colorado and other birds accumulated during the past thirty-five years by Mr. C. E. Aiken of this city. About one hundred and fifty of these have thus far been mounted for exhibition and are displayed in one of the wall cases on the south side of the Museum. The rest of the collection is in the form of skins, and is arranged in two large cabinets in the Director's room; it is available for study by any

one who wishes to make use of it. All the birds are fully labeled and a complete card catalog has been prepared.

A small collection of birds' eggs, mainly the gift of Ivan C. Hall, of the class of 1908, has been placed on exhibition.

A collection of Colorado Mammals is being made. This now contains over fifty mounted specimens of local species, and additions are being made. These are exhibited in the case next to the Aiken birds

A study collection of mammal skins has also been added. These are in a cabinet in the Director's room.

A collection of Colorado fishes, amphibians, and reptiles, has been begun. They are in a show case in the large hall.

MINERALOGY.—The collection in mineralogy occupies the north side of the room and includes 1,450 specimens of minerals, common, commercial, and rare.

ETHNOLOGY is represented by a series of casts of skulls and brains of different peoples. The series also contains 125 masks of South Sea Islanders and 25 framed pictures of different races.

ANTHROPOLOGY.—The anthropological department contains a large amount of pottery from Missouri, New Mexico, and Peru; the Taos Pueblo, Pueblo Bonito, and DeChelly ruins are reproduced in miniature. The Bixby-Lang and Deane collections from the Cliff-dwellings were received thru General Palmer. The Bixby-Lang collection was made in Southeastern Utah and Northern Arizona during the years 1897-'98. The collection includes almost 500 specimens of pottery, implements, skulls, and mummies. The specimens of pottery are exceptionally well preserved. The Deane collection was made in Western New Mexico and includes over 800 specimens of pottery, implements, skulls, and idols.

There is also a collection of Egyptian antiquities received from the Egyptian Exploration Society, of which Colorado College is a member.

RELIGIOUS LIFE.

The College is distinctly Christian, and recognizes character as the highest attainment. It is unsectarian in its management. Entering students are asked what their denominational affiliations are, and what churches in the city they desire to attend;

lists are sent to the pastors of these churches, who seek out the students and bring about them the influence of church homes. Morning prayer, at which attendance is required of all students, is held in the chapel daily, led by different members of the Faculty. Twice a week questions bearing directly on student problems are discussed by members of the Faculty and other invited speakers.

In September, 1911, the College Vesper Service was established. It is held every Sunday afternoon during term time at five o'clock. A vested choir leads in the music under the direction of Mrs. J. S. Tucker. The attendance of students is not required, but there is a large voluntary attendance.

The list of preachers during the year 1917 was as follows:
Dr. J. A. Beebe, Iliff School of Theology, Denver, Colorado.

Rev. R. E. Dickenson, Methodist Church South, Colorado Springs, Colorado.

Mr. Brewer Eddy, International Y. M. C. A. worker.

Rev. Samuel Garvin, First Presbyterian Church, Colorado Springs, Colorado.

Rev. S. Ralph Harlow, Chaplain of the International College of Smyrna, Turkey.

Rev. J. Arthur Jeffers, First Congregational Church, Pueblo, Colorado.

Rt. Rev. Irving P. Johnson, Denver, Colorado.

Rev. Allen Moore, Colorado Springs, Colorado.

Pres. George Norlin, University of Colorado, Boulder, Colorado.

Mr. C. C. Robinson, International Secretary for the Y. M. C. A.

Prof. James Hardy Ropes, of Harvard University, Cambridge, Mass.

Rev. J. H. Spencer, First Baptist Church, Colorado Springs, Colorado.

Rev. Fred Staff, First Congregational Church of Colorado Springs.

Rev. A. A. Tanner, First Congregational Church of Denver, Colorado.

Prof. Von Nappen of Columbia University.

Rev. C. B. Wilcox, First Methodist Church of Colorado Springs.

Rev. Robert B. Wolf, of the English Lutheran Church, Colorado Springs.

STUDENT PUBLICATIONS.

The Tiger, a semi-weekly newspaper, is issued by an editorial board composed of College students. An annual, *The Pike's Peak Nugget*, is published by the Junior class. A *Handbook* of information is issued at the beginning of the College year.

LITERARY SOCIETIES.

The Apollonian Club and the Pearsons Dramatic Club, composed of young men; the Minerva Society, the Contemporary Club, and the Hypatia Society, composed of young women, hold weekly meetings for debate and other literary work.

ENGINEER'S CLUB.

An Engineers' Club meets fortnightly during the winter term to consider current events in this field and discuss papers of professional interest.

THE STUDENT COMMISSION OF COLORADO COLLEGE.

By a charter adopted in the autumn of 1915, a Student Commission was created, composed jointly of delegates from the various student organizations and of officers elected by these delegates. The object of the Commission is to provide a representative body of students which, by virtue of the position and influence of its members in student affairs, shall be able to supervise and control all non-academic activities of the student body as a whole.

ORATORICAL AND DEBATING CONTESTS.

All contests in public speaking are in charge of the Department of Public Speaking and the Manager of Debating. Two intercollegiate debates are held during the second half-year. This year there has been inaugurated a debate between representatives of the Freshman and Sophomore classes.

PHI BETA KAPPA.

A charter of the Phi Beta Kappa Society was granted to Colorado College in 1904. The object of the society is the promotion of scholarship and friendship among students and graduates of American colleges. The members of the Society are elected primarily from the best scholars of the graduating classes of the College; secondly, from the graduates of the College whose work after graduation entitles them to such honor; and lastly from any persons distinguished in letters, science, or education. In addition to scholarship, power of leadership and good moral character are the qualifications for membership.

Recently the rules of election to membership have been modified somewhat. Two members are elected from each Junior class. In the Senior year additional elections are made, increasing the total number to not more than one-seventh of the regular members of each graduating class in the College of Arts and Sciences. No student is eligible who does not take his Junior and Senior years in Colorado College.

THE COLORADO COLLEGE PUBLICATION.

Under this title is now included the scientific publication formerly issued as "COLORADO COLLEGE STUDIES," as well as the announcements of the various departments of the College, the annual catalog, etc. This publication appears every six weeks during the academic year.

The following have been published during the academic year of 1916-1917:

Social Science Series:

Vol. II., No. 13. The Growth of Colorado College. Edited by *Jessie B. Motten*.

No. 14. Report on College and University Administration, Part I.

Language Series:

Vol. II., No. 32. Matthew Arnold's Poetry—An Appreciation. *Atherton Noyes*.

No. 33. St. Severinus and the Province of Noricum. *Charles C. Mierow*.

Bulletin Series:

No. 49. Catalog of Colorado College, 1917.

PUBLIC LECTURES AND READINGS.

In March of 1917 a course of lectures on "The Application of New Testament Teaching to Sociology" was given in Perkins Hall by Dr. James Hardy Ropes, exchange professor from Harvard University. The titles were as follows:

Tuesday, March 6: "Sociology and the Uses of the New Testament."

Tuesday, March 13: "The Sociological Application of the Gospels."

Tuesday, March 20: "The Sociological Aspects of the Epistles of Paul."

Under the auspices of the Department of English, evening lectures on Emerson and his Concord associates were given in Perkins Hall by Charles J. Woodbury.

OFFICERS OF THE ALUMNI ASSOCIATION.

ROBERT G. ARGO, Colorado Springs.....	<i>President</i>
MRS. ERNEST B. FOWLER, Denver.....	<i>Vice-President</i>
HAROLD T. DAVIS, Colorado Springs.....	<i>Secretary</i>
WALTER C. BYBEE, Colorado Springs.....	<i>Treasurer</i>

Executive Committee.

ROBERT G. ARGO,	WALTER C. BYBEE,
MRS. ERNEST B. FOWLER,	HERBERT G. SINTON,
HAROLD T. DAVIS,	ALBERT R. ELLINGWOOD,
LOIS ELLET SMITH.	

EXPENSES.

Tuition by the year (except in department of Forestry)....\$80.00

Tuition in Department of Forestry:

Regular course for full year (ten months).....	80.00
Summer Course alone (four weeks).....	12.00

Students who register for less than eight hours of work pay the usual entrance fees, and \$10.00 for each half-year course. Anyone wishing to attend lectures or recitations without receiving credit upon the College records may secure the privilege of such attendance on the payment of \$5.00 for each half-year course.

Matriculation fee	\$5.00
(From the above-named fees there is no rebate in case of withdrawal or dismissal.)	
Athletic and "Associated Students" fee.....	5.00
Board by the half-year in halls (for women).....	85.00
Board in the Spring vacation, by the week.....	4.00
Board in Cossitt Hall (for men), per week.....	4.00
Rooms, warmed, furnished, and lighted, by the year, for each occupant	\$40.00 to 80.00

The standard rental is \$80. The number of rooms under that price is very limited. Application should be made early. Rooms are rented by the year, and will be retained for incoming students only when the application is accompanied by a deposit of \$5.00. This fee will be credited on the bills for room rent, and will be refunded only in case the room is given up by September first.

No young woman will be received into the halls who is not of full college rank, who is less than sixteen years of age, and who is not taking at least fifteen hours' work or its equivalent. Young women from out of town are required to live on the campus.

The women's residence halls are closed during the Christmas recess for cleaning and repairs.

Young men who room off the campus can obtain rooms at prices similar to those charged by the College.

Students who room in the College residences are required to furnish towels, bed linen, and blankets.

Nurse's fee (for young women only): see p. 118.....	\$5.00
Fees of College physician:	
Office consultation50
Visits to rooms	1.00
Infirmary fee (including meals), a day.....	1.00

For prolonged illness and in cases of contagious diseases, a special nurse is employed, and the expenses are charged to the patient.

The following is an estimate of the necessary expenses for the college year (not including matriculation fee, nurse's fee, cost of textbooks, laundry, and incidentals):

Tuition, \$40 each half-year.....	\$80.00	\$80.00
Room rent, \$20 to \$40 each half-year.....	40.00	80.00
Board, \$85 each half-year.....	170.00	170.00
	<hr/>	<hr/>
	\$290.00	\$330.00

In addition to these items, fees are charged for the use of apparatus and materials in the various laboratories, as follows: Biology, p. 57; Chemistry, p. 63; Civil 2, p. 64; Civil 82, p. 68; Electrical Laboratory, p. 77, Note; Geology (Course 2), p. 81; Physics, p. 99; Psychology, p. 95; Shop, p. 106; Field Course in Surveying, p. 68. (These fees are paid directly to the respective departments at the beginning of each year.)

An additional charge of \$5.00 is made on the last term bill of the Seniors to cover expenses of graduation.

The bills for tuition, room rent, and board are issued at the beginning of each half-year, and are payable immediately. Students who withdraw before the end of the term pay full tuition. Students who withdraw less than six weeks before the end of the term pay full board and room rent. No deduction will be made for short absences during the term. In case of withdrawal more than six weeks before the end of the term, half of the room rent and the whole of the amount paid for board for the unexpired portion of the term will be returned to the student. The date of withdrawal is reckoned from the time when official intimation of the fact has been received from parent or guardian.

The College reserves the right to exclude at any time students whose conduct or academic standing renders them undesirable members of the college community; and in such cases the fees due the college are not refunded or remitted.

Remittances should be made by draft or money order.

The degree will not be granted to any student whose college bills are not paid before Commencement.

SCHOLARSHIPS.

The income of the following scholarships is devoted to the aid of worthy students who may need assistance in completing their course, and who, by their scholarship and character, prove themselves worthy of such assistance.

The Thomas Davee Scholarship of \$500, established by the late Mrs. T. V. D. Mitchell, of West Minot, Maine.

The Rice Scholarship of \$700, established by friends of the Rev. Chas. B. Rice, D. D., of Danvers, Mass.

The Currier Scholarship of \$1,000 founded by the late Hon. Warren Currier, of St. Louis, Mo.

The Edwards Scholarship of \$500, given by the Congregational Church of Wellesley Hills, Mass.

The Mary Caroline Quincy Scholarship of \$500, given by the late George Henry Quincy, of Boston, Mass.

The Lawrence Myers Scholarship of \$1,000, and the Lucy Scott Myers Scholarship of \$1,000, given by Mrs. Letitia M. Myers, of Plainfield, New Jersey.

The Fay Scholarship of \$1,000 founded by the late Eliza A. Fay, of Boston, Mass.

A Scholarship of \$1,000 given by Mr. William F. Richards of Colorado Springs, thru the Woman's Educational Society of Colorado Springs.

The Willard B. Perkins Scholarship of \$7,000. The second Willard B. Perkins Scholarship of \$7,000. These two scholarships were given by the late Willard B. Perkins, of Colorado Springs.

The Hawley Scholarship Fund of the Woman's Educational Society, now amounting to about \$10,000, founded by the will of Mrs. Mary R. Hawley, of Baltimore, Md., the annual income of which is used in the payment of scholarships of such young women of the College as the Faculty may recommend, preference being given to daughters of home and foreign missionaries.*

The Hawley Scholarship Fund of Colorado College, now amounting to about \$9,000, founded by the will of Mrs. Mary R. Hawley, of Baltimore, Md., the annual income of which is used in the payment of scholarships for such students of the College as the Faculty may recommend who may be fitting themselves for distinctively Christian work.*

*Students who desire to have their names considered, must make application.

The Hawley Memorial Fund, now amounting to about \$9,000, founded by the will of Mrs. Mary R. Hawley, of Baltimore, Md., in memory of her husband, Mr. Martin Hawley, the annual income of which is loaned to "worthy and deserving students of the College, as the Faculty may see proper."

The Strettell Memorial Fund of \$2,000, given by Mrs. Alma G. V. Harrison, of London, England, and General William J. Palmer, of Colorado Springs, in memory of Mr. Arthur E. V. Strettell, Mrs. Harrison's brother, who died in Colorado Springs in 1882. The income of this fund is to be used to aid students suffering from lung troubles.

The Mary G. Slocum Scholarship of \$100 a year, given by the Woman's Educational Society of Colorado College. This scholarship is awarded on the basis of competition to young men of the Junior Class.

The Ruth Danforth Scholarship of \$1,000, established by Mrs. Emma Danforth Wiley, of Colorado Springs.

The Emma Danforth Wiley Scholarship of \$1,000.

The Elizabeth C. McAllister Scholarship of \$1,000, established by members of her family.

Several other scholarships are supported by annual subscriptions.

SELF-SUPPORT.—Advanced students of high standing have occasional opportunities for private teaching. Capable and faithful young men can usually find work in town. During the present year the Employment Bureau of the College has secured about 250 positions for students. A limited amount of service in Bemis Hall is offered to young women; this is not often available for first-year students.

THE WOMAN'S EDUCATIONAL SOCIETY.

This Society was formed in April, 1889, by the women of Colorado Springs. Its purpose, as expressed in its constitution, "is to give physical, intellectual, and spiritual aid to students in any department of Colorado College." This Society built Montgomery Hall, furnished Ticknor and McGregor Halls, and has been of service in many ways to the College. It endeavors to help the members of the Faculty in their personal work for students, especially those who are self-supporting.

First.—Loans may be made in small amounts to worthy and deserving students preferably in the Junior or Senior class of Colorado College on the recommendation of such officers of the College as are acquainted with their record.

Second.—Students may receive loans without interest until their connection with the College ceases; after that time their notes shall draw interest at 4 per cent.

For the scholarships within the gift of the Society, see p. 137.

The officers for the current year are:

President—Mrs. William F. Slocum.

First Vice-President—Mrs. M. C. Gile.

Second Vice-President—Mrs. L. J. Skelton.

Third Vice-President—Mrs. F. E. Brooks.

Recording Secretary—Miss Marion Churchill.

Corresponding Secretary—Mrs. Asa T. Jones.

Treasurer—Mrs. Florian Cajori.

HOSPITAL FUND.

The Trustess of the Bellevue Sanitarium have given to the College nearly \$4,000 as the nucleus of a hospital fund for the students.

THE NEEDS OF THE COLLEGE.

Colorado College, never more truly than today, has great and pressing needs. Its growth during the last fifteen years has been steady and rapid, and its friends have generously assisted in helping to meet its constantly enlarging opportunity. If it is to do the work which legitimately belongs to it and have its part in meeting the educational demands of the great section of the country in which it is located, if it is to provide a thoro and broad training under positive Christian influences for those who are coming to it in constantly increasing numbers, not only from Colorado, but from the entire country, it must have in the immediate future larger resources than those upon which it has been obliged to rely during the last few years.

Among the pressing needs are the following:

General Endowment.—For the last ten years the College has been doing a work equal in amount and quality to that done

by older eastern institutions possessing a much larger endowment. In consequence each year a deficit has had to be faced. A much larger sum than it has at present must be provided if the College is to go forward to fill its place in the educational life of the country.

Professorships.—it is hoped that one form in which this larger endowment will be bestowed is in the provision of permanent funds for individual professorships.

Funds for the Library.—The library has only a few hundred dollars of permanent funds. It must rely for increase upon gifts and upon purchases made out of current expense funds to meet the absolute requirements of the different departments. There is an imperative need for money to be used at once in filling of gaps in the material the library already possesses, and also for permanent funds from which additions may be regularly made in accordance with the varied intellectual needs of the College.

Special Funds for Scientific Research.—Money to be devoted to scientific work in special lines is very greatly needed. The opportunities of Colorado College in this direction are unusual, because of the geographical, meteorological, and geological situation. The attention of those interested in the advancement of science is earnestly called to this fact.

Funds for the Department of Engineering.—This department of the College needs a considerable sum of money to be immediately expended in the proper development of its work, and also a large endowment fund to secure its stability and future growth. Large gifts bestowed for these ends will directly aid in the development of the rich resources of Colorado and the adjoining mountain states.

Scholarships.—The Trustees desire to emphasize the fact that many young people in a new country are obliged to earn their education by hard and self-denying work. Colorado College still needs a large addition to her scholarship funds. Money thus applied tends directly to the profit of the individual and of the country.

Fellowships.—It would be of great value in developing high-

er standards of scholarship if several graduate fellowships in various departments could be established.

Infirmary.—The Infirmary in Ticknor Hall, which is available for young women only, is inadequate to the growing needs of the College. There should be provided a separate building, in which contagious diseases can be cared for, as well as ordinary cases of illness. A fund has been started for the endowment of a cot, for use in case of illness among students who are working their way. Additions to this fund are an urgent need.

FORMS OF BEQUEST.

Those who intend to devise property to Colorado College, or to the Woman's Educational Society, are requested to employ one of the following Forms of Bequest:

"I hereby give, devise, and bequeath, unto The Colorado College of Colorado Springs, Colorado, the sum of.....Dollars.."

"I hereby give, devise, and bequeath unto the Woman's Educational Society of Colorado College, of Colorado Springs, Colorado, the sum of.....Dollars."

If property other than money is willed, the form should be correspondingly varied.

Commencement, 1917

Award of Honors

HIGH HONORS.

Raymond Waldron Maxwell, '17	Ernest Amos Johnson, '18
Ethel May Shadowen, '17	Corinne Ida Kipp, '18
Charlotte Touzalin, '17	Donald DeCou Smythe, '18
Irene Brownlee Donaldson, '18	Lysle Winston Cooper, '19

HONORS.

Edwin Frickey, '17	Horace Herbert Hopkins, '18
Myriam Christy Garrett, '17	Dorothy L. Koch, '18
Denver Vickers, '17	Marion Naomi Mendenhall, '18
Horace Jay Wubben, '17	Walter Lincoln Palmer, '18
Dorothy Huntington Coffin, '18	Olin Eugene Mace, '19
Edith Irene Glassford, '18	William Arthur McDonald, '19
Marjorie Lucretia Anna Davis, '19	

Award of Scholarships

PERKINS SCHOLARS.

Charles Thompson Crockett, '19 Marjorie Lucretia Anna Davis, '19

MARY G. SLOCUM SCHOLAR.

Paul Myron Hamilton, '18

PHI BETA KAPPA ELECTIONS.

SENIOR ELECTIONS.

Ruth Graham Collins, '17	Adele Frederica Vorrath, '17
Raymond Waldron Maxwell, '17	Dorothy Waples, '17
Henry Sager, '17	Marjorie Helen Whipple, '17
Charlotte Touzalin, '17	Horace Jay Wubben, '17
Denver Vickers, '17	Matsusaburo Yokoyama, '17

JUNIOR ELECTIONS.

Edith Irene Glassford, '18	Ernest Amos Johnson, '18
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Degrees Conferred, Commencement, 1917

DEGREES IN COURSE.

BACHELOR OF ARTS.

Magna cum Laude.

Ruth Graham Collins
Edwin Frickey
Myriam Christy Garrett

*Raymond Waldron Maxwell
Adele Frederica Vorrath

Cum Laude.

Hazel Bowers
Edith Boyd
Effie Maria Brooks
Rose Miriam Gill
Julia Frances Hassell
Madre Merrill
Helen Louise Nicholson
Henry Sager

Ethel May Shadowen
Charlotte Maurice Touzalin
Annette Josine van Diest
Denver Vickers
Florence Edna Wallrich
Dorothy Waples
Marjorie Helen Whipple
*Horace Jay Wubben

Matsusaburo Yokoyama

*Baldwin, Jeffrey Mathewson
Belk, Dorothea
Bispham, Miriam Freeman
Bradley, Ruth Elizabeth
Brooks, Adin Paul
Bryson, Florence June
Caldwell, Helen Elizabeth
Carlson, Georgia May
Carnahan, Mary Kathryn
Carrick, Mattie Louise
Clemans, Martha Elizabeth
Cunningham, Agnes Blanche
Dawson, Ruth Elizabeth
Dunlavy, Eva Irene
Durbin, Helen Avery
*Ewert, Earl Cranston
Flora, Harriette Pearl
Garnett, Anna Maud
*Garside, Benjamin Charles, Jr.
Gebhardt, Glenn Leslie
Gleason, Ruth
Graham, Margery
Hamilton, Sara Grace
Harrison, Hazel Dawn
Henn, Samuel Chester, Jr.

Hunt, Winifred Belle
Hutchison, Mary Elizabeth
Joslin, Doyle
Keating, Kathrine
Keeth, Frances
King, Bertha Lu
Lennox, Helen Virginia
Mackay, Anne Louise
McKesson, William Bryan
Martin, Gladys Marian
Mason, Edith Parsons
Meyer, Grace Rosella
Moseley, Helen Fern
Nate, Mildred Evans
Nowels, Kenneth Busey
Pearce, Virginia Lizette
Perryman, Lora Ara Belle
Richardson, Irma Maude
Shuler, Winnifred
*Sumner, John Robert Carew
Tamayo, Fernando Carlos
Walker, Bertha
Weston, Sylvia Gwendolyne
Williams, Lyle Gayle
Wilson, Beulah Glee

*Degrees granted May 8, 1917 because of enlistment in the Reserve Officers' Training Corps.

BACHELOR OF ARTS IN BANKING AND BUSINESS ADMINISTRATION.

Deutschbein, Joseph Anton	*Rawlings, John William
*Holman, Newton Davis	Slack, Arthur Benjamin
Neff, Kinzie Benewell	Spaulding, John William
Pennington, Loyd Alfred	*Taylor, Theron Jack
	*Shadowen, Carl Albert

BACHELOR OF SCIENCE IN CIVIL ENGINEERING.

*Dudley, Donald Ashworth	Kingman, Victor Christie
	*Reed, Cecil David.

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING.

Dockstader, Henry Peter	*Pollock, Milton Wayne
Martin, Earl Gilbert	Powell, Arthur Lester
	*Taylor, Charles Chauncey.

FOREST ENGINEER.

Merrill, Glen

*Degrees granted May 8, 1917 because of enlistment in the Reserve Officers' Training Corps.

Students

GRADUATE STUDENTS.

NAME	HOME ADDRESS	CITY ADDRESS
Myriam Christy Garrett. A.B., Colorado College,'17	Colorado Springs.	710 N. Cascade Ave.

SENIORS.

Adams, Carol Worthington	Fort Collins, Colo.	Bemis Hall
Baker, Sara Emma	Colorado Springs.	1006 E. Platte Ave.
Baenteli, Gertrude Rosalie	Colorado Springs.	Bemis Hall
Bock, Adolph	St. Joseph, Mo.	632 N. Nevada Ave.
Boucher, Paul Edward	Colorado Springs.	1014 N. Weber St.
Burlingame, Robert Miles	Denver, Colo.	1106 N. Weber St.
Campbell, William Armstead, Jr.	Colorado Springs.	424 N. Nevada Ave.
Carpenter, Helen Bowen	Mancos, Colo.	Bemis Hall.
Carrick, Eilene Gregory	Colorado Springs.	1430 N. Weber St.
Cheese, Naomi Celia	Peyton, Colo.	1002 Colo. Ave.
Clark, Catherine Pauline	Aspen, Colo.	Bemis Hall.
Clough, Marie Catherine	Colorado Springs.	912 N. Weber St.
Coffin, Dorothy Huntington	Colorado Springs.	Bemis Hall.
Coldren, Fred George (B)	Denver, Colo.	1310 N. Nevada Ave.
Cook, Nell	Yoder, Colo.	Bemis Hall.
Crane, Dorothy Dunbar	Ridgefield, Conn.	Bemis Hall.
Cummings, Dwight A.	Colorado Springs.	406 Cooper St.
Davison, Elizabeth Leavitt	Colorado Springs.	220 E. Yampa St.
Donaldson, Irene Brownlee	Denver, Colo.	Bemis Hall.
Durkee, Alpha Louise	Manitou, Colo.	Manitou, Colo.
Dworak, Alfred Vance (B)	Longmont, Colo.	1106 N. Weber.
Dworak, Frances Emma	Colorado Springs.	1203 Grant Ave.
Farmer, Grace Elinor	Canon City, Colo.	Bemis Hall.
Freeman, Marie	Colorado Springs.	734 E. Boulder St.
Gates, Lilian Carpenter	Sapulpa Okla.	Bemis Hall.
Gault, Mary Caroline	Cromwell, Iowa	Bemis Hall.
Gilliland, Harold Edw. (B)	La Junta, Colo.	1319 N. Nevada Ave.
Glassford, Edith Irene	Grand Junction, Colo.	Bemis Hall.
Hale, Gladys Fern	Rocky Ford, Colo.	Bemis Hall.
Hamilton, Paul Myron	Colorado Springs.	731 N. Weber St.
Harlan, Lois Logan	Colorado Springs.	317 E. Del Norte St.
Harris, Marea Vaughan	Newcastle, Colo.	Bemis Hall.
Holloway, Florence Marie	Colorado Springs.	1340 N. Tejon St.
Hopkins, Hazel M.	Denver, Colo.	Bemis Hall.
Huston, Harold	Manzanola, Colo.	115 N. Weber St.
Johnson, Ernest Amos (B)	Ouray, Colo.	1319 N. Nevada Ave.
Johnson, Harriet Huston	Denver, Colo.	Bemis Hall.
Kennon, Anne Byrd	Denver, Colo.	Bemis Hall.
Kinsman, Mary Esther	Colorado Springs.	3419 W. Colo. Ave.

NAME	HOME ADDRESS	CITY ADDRESS
Kipp, Corinne Ida	<i>Salt Lake City, Utah</i>	Bemis Hall.
Kittleman, Mary Elizabeth	<i>Colorado Springs.</i>	1419 N. Tejon St.
Koch, Dorothy L.	<i>Aspen, Colo.</i>	Bemis Hall.
Landrum, Agnes Virginia	<i>Sterling, Colo.</i>	Bemis Hall.
Lawrence, Grace Marie	<i>Colorado Springs.</i>	1709 Colo. Ave.
Lewis, Waldo McKinney	<i>Delta, Colo.</i>	1319 N. Nevada Ave.
Liljestrom, George Wm. (B)	<i>Colorado Springs.</i>	1117 N. Nevada Ave.
Loomis, Dorothy Crofts (B)	<i>Denver, Colo.</i>	Bemis Hall.
McClellan, Ruth S.	<i>Rocky Ford, Colo.</i>	Bemis Hall.
McIntosh, Margaret Effie	<i>Colorado Springs.</i>	840 E. Platte Ave.
McKenney, Sannie Pendleton	<i>Denver, Colo.</i>	Bemis Hall
McWhorter, Lucile	<i>Denver, Colo.</i>	Bemis Hall
Magee, Annie Gretchen	<i>Alamosa, Colo.</i>	Bemis Hall
Matson, Ona Marguerite	<i>Denver, Colo.</i>	Bemis Hall
Mendenhall, Marion Naomi	<i>Montrose, Colo.</i>	Bemis Hall
Mimmack, William Edward	<i>Eaton, Colo.</i>	1117 N. Nevada Ave.
Neuswanger, Chris Harold	<i>Greeley, Colo.</i>	1122 N. Cascade Ave.
Offutt, Samuel Russell (E)	<i>Bloomfield, Ky.</i>	1427 N. Nevada Ave.
Paul, Jeanie Allyn	<i>Durango, Colo.</i>	Bemis Hall.
Pond, Harold Mears (B)	<i>Colorado Springs.</i>	1207 Washington Ave.
Reid, Lucy Gibbs	<i>Colorado Springs.</i>	505 N. Weber St.
Robinson, George Sidney	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Rudolph, Julia Wilson	<i>Denver, Colo.</i>	Bemis Hall.
Shelden, Frank Clifton	<i>Colorado Springs.</i>	326 E. Bijou St.
Sheppard, Percival Eugene	<i>Eaton, Colo.</i>	Hagerman Hall.
Sinden, Roger Hull	<i>Canon City, Colo.</i>	Hagerman Hall.
Skinner, Marion Louise	<i>Tulsa, Okla.</i>	McGregor Hall.
Stukey, Lorna	<i>Steamboat Springs, Colo.</i>	Bemis Hall.
Taylor, Jean Katherine	<i>La Grange, Ill.</i>	107 S. Nevada Ave.
Thomas,		
Thornton Henry, Jr.	<i>Ordway, Colo.</i>	1117 N. Nevada Ave.
Tucker, Hayse Robert (B)	<i>Colorado Springs.</i>	1122 N. Cascade Ave.
Vorrath, Edna Hermina	<i>Colorado Springs.</i>	219 E. Fontanero St.
White, Helen Phillips	<i>Colorado Springs.</i>	21 Cheyenne Blvd.
Wilkin, Juliet	<i>Canon City, Colo</i>	Bemis Hall.

JUNIORS.

Allen, Harold Franklin	<i>Grand Junction, Colo.</i>	Hagerman Hall
Anderson,		
Eugene Linnae (E)	<i>Colorado Springs.</i>	1129 Washington Ave.
Armstrong, Annie Eliza	<i>Fort Collins, Colo.</i>	McGregor Hall.
Azpell, Dorothy Phillips	<i>Denver, Colo.</i>	McGregor Hall.
Bendure, Hazel Valentine	<i>Durango, Colo.</i>	Ticknor Hall.
Bickmore, Thankful	<i>Denver, Colo.</i>	McGregor Hall.
Bottler, Joseph Sebastian (B)	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Bowers, Zerua Rosalie	<i>Crowley, Colo.</i>	McGregor Hall.
Crockett,		
Chas. Thompson (B)	<i>Pueblo, Colo.</i>	1319 N. Nevada Ave.

NAME	HOME ADDRESS	CITY ADDRESS
Crockett, Elizabeth Irving	<i>Pueblo, Colo.</i>	McGregor Hall.
Davis, Donald Watson (E)	<i>Colorado Springs.</i>	21 E. Caramillo St.
Davis, Marjorie Lucretia Anna	<i>Colorado Springs.</i>	21 E. Caramillo St.
De Longchamp, Mildred	<i>Colorado Springs.</i>	116 E. Caramillo St.
Dillon, Adelaide	<i>Castle Rock, Colo.</i>	McGregor Hall.
Ethell, Emily Gertrude	<i>Denver, Colo.</i>	5 Pelham Place
Flynn, Edmund Clarence (E)	<i>Colorado Springs.</i>	518 N. Cascade Ave.
Fukushima, Iwao (E)	<i>Cheyenne, Wyo.</i>	7 Pelham Place
Gildersleeve, Rosemary	<i>Denver, Colo.</i>	Ticknor Hall.
Grafton, Gladys	<i>Colorado Springs.</i>	1207 N. Custer St.
Green, Annie Cliffe	<i>Council Bluffs, Ia.</i>	McGregor Hall.
Gregg, Leah Jones	<i>Colorado Springs.</i>	1223 N. Tejon St.
Gregory, Caspar Rene	<i>Westminster, Colo.</i>	819 N. Nevada Ave.
Hart, Chester Eugene	<i>Colorado Springs.</i>	1310 Glen Ave.
Hepplewhite, James Gladstone	<i>Canon City, Colo.</i>	Hagerman Hall.
Hetherington, Duncan Charteris	<i>Colorado Springs.</i>	218 E. Columbia St.
Higbee, Daniel Riggs	<i>Fowler, Colo.</i>	1106 N. Weber St.
Higgins, Nellie	<i>Denver, Colo.</i>	McGregor Hall.
Houston, Stella Barse	<i>Kansas City, Mo.</i>	20 E. San Rafael St.
Hung Woo; Mary Janet	<i>Denver, Colo.</i>	McGregor Hall.
Kingman, Helen Mary	<i>Colorado Springs.</i>	719 N. Nevada Ave.
Kistler, Mary Lou	<i>Colorado Springs.</i>	3 Crescent Apt.
Lane, James Preston	<i>Colorado Springs.</i>	1525 N. Weber St.
Leisy, Agnes (B)	<i>Montrose, Colo.</i>	Bemis Hall.
McClain, James William, Jr.	<i>Manzanola, Colo.</i>	911 N. Nevada Ave.
McClintock, Donald Melrose	<i>Colorado Springs.</i>	931 N. Corona St.
McGlashan, Jessie Partch	<i>Grand Junction, Colo.</i>	McGregor Hall.
McKinnev, Marguerite Alice	<i>Colorado Springs.</i>	423 N. Franklin St.
McLaughlin, Romain Edward (B)	<i>Florissant, Colo.</i>	Hagerman Hall.
McLean, Katharine	<i>Denver, Colo.</i>	Ticknor Hall.
McMillan, Neil Taylor	<i>Denver, Colo.</i>	1122 N. Cascade Ave.
Maxwell, William Floyd	<i>Colorado Springs.</i>	1517 N. Weber St.
Moore, Olive Victoria	<i>Colorado Springs.</i>	519 N. Tejon St.
Morris, Robert Watts	<i>Colorado Springs.</i>	2119 N. Nevada Ave.
Morrow, Florence Marie	<i>Colorado Springs.</i>	Broadmoor.
Neiman, Leonard Adam	<i>Eds, Colo.</i>	125 E. Cimarron St.
Nelson, Agnes Ure Gillespie	<i>Denver, Colo.</i>	McGregor Hall.
Nichols, Madge Irene	<i>Colorado Springs.</i>	Broadmoor.
Nicholson, Elizabeth	<i>Colorado Springs.</i>	110 S. Wahsatch Ave.
Nierman, Alberta Emma	<i>Manitou, Colo.</i>	144 Deerpark Ave.
Norris, Valeda Gertrude	<i>La Salle, Colo.</i>	Ticknor Hall.
Oberndorfer, Beulah	<i>Colorado Springs.</i>	916 N. Weber St.
Perkins, Mac Dudley	<i>Denver, Colo.</i>	Hagerman Hall.
Pickard, Edith Alta	<i>Longmont, Colo.</i>	Ticknor Hall.

NAME	HOME ADDRESS	CITY ADDRESS
Pirie, Alice May	<i>Fort Collins, Colo.</i>	Ticknor Hall.
Prior, Frank Hart	<i>Colorado Springs.</i>	720 N. Tejon St.
Pound, Vera Helen	<i>Pagosa Springs, Colo.</i>	Ticknor Hall.
Randall, Mary	<i>Colorado Springs.</i>	1812 N. Nevada Ave.
Reid, Margaret	<i>Colorado Springs.</i>	505 N. Weber St.
Schmitt, Celestine Fredericka	<i>Colorado Springs.</i>	1 Columbia Apts.
Scott, Hortense Lucile	<i>Colorado Springs.</i>	1402 N. Weber St.
Seitzinger, Edith Viola	<i>Colorado Springs.</i>	301 Mesa Road.
Swart, Ellen Orinda	<i>Duluth, Minn.</i>	McGregor Hall.
Torbit, Pauline Mary	<i>Fountain, Colo.</i>	McGregor Hall.
Whyte, Lucile Janet	<i>Denver, Colo.</i>	Bemis Hall.
Williams, Elsa Leigh	<i>Colby, Kans.</i>	McGregor Hall.
Wills, Benjamin Green	<i>Colorado Springs.</i>	2018 Armstrong St.
Zirkle, Ruth	<i>Denver, Colo.</i>	McGregor Hall.

SOPHOMORES.

Adriance, Annabel Ardeth	<i>Gobleville, Mich.</i>	206 S. Nevada Ave.
Ainsworth, Albert Gaylord	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Anderson, Edith Elizabeth	<i>Colorado Springs.</i>	624 E. St. Vrain St.
Anderson, Marguerite Anna	<i>Aspen, Colo.</i>	Bemis Hall.
Anderson, Norval Eugene (E)	<i>Colorado Springs.</i>	535 E. Platte Ave.
Arms, John Pickering (B)	<i>Grand Junction, Colo.</i>	1922 N. Cascade Ave.
Bancroft, Helen Louise	<i>Colorado Springs.</i>	236 W. Dale St.
Barney, Armin Bradley	<i>Colorado Springs.</i>	1828 N. Nevada Ave.
Bell, Gladys Colette	<i>Greeley, Colo.</i>	Ticknor Hall.
Bendure, Gladys Berta	<i>Durango, Colo.</i>	Montgomery Hall.
Bischof,	<i>Colorado Springs.</i>	605 N. Cascade Ave.
Grace Louise Elizabeth		
Blair, Ruford Watt	<i>Colorado Springs.</i>	24 E. Dale St.
Blair,		
Archibald David Todd (E)	<i>Edinburgh, Scotland</i>	1414 N. Nevada Ave.
Brown, Ruth Thompson	<i>Colorado Springs.</i>	1105 N. Weber St.
Brumfield, Roy Jennings	<i>Silverton, Colo.</i>	1319 N. Nevada Ave.
Burch, Norene Melvina	<i>Colorado Springs.</i>	1509 S. Nevada Ave.
Carley, Meda Faythe	<i>Cheyenne, Wyo.</i>	Ticknor Hall.
Carlson, Jessie Alvina	<i>Julesburg, Colo.</i>	Montgomery Hall.
Carter, John Allen, Jr.	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Case, Ashbel Wesley	<i>Colorado Springs.</i>	1121 N. Nevada Ave.
Catren, Mary Lucile	<i>Denver, Colo.</i>	Bemis Hall.
Clemans, Maria Jeannette	<i>Colorado Springs.</i>	17 E. Dale St.
Coffin, Philip Tristram (E)	<i>Colorado Springs.</i>	620 E. Columbia St.
Collins, Raymond Joy (B)	<i>Boyers, Colo.</i>	1117 N. Nevada Ave.
Cooper, Lysle Winston	<i>Colorado Springs.</i>	705 S. Nevada Ave.
Copeland, William Duncan	<i>Denver, Colo.</i>	911 N. Nevada Ave.
Crabb, Donald Wendell (B)	<i>Greeley, Colo.</i>	630 N. Wahsatch Ave.
Crabtree, Lottie Lucina	<i>Colorado Springs.</i>	1835 Colorado Ave.
Cunningham, Myrtle Mildred	<i>Colorado Springs.</i>	415 E. San Rafael St.

NAME	HOME ADDRESS	CITY ADDRESS
DeFlon, William Dewey	<i>Colorado Springs.</i>	17 N. Weber St.
Devin, Yvonne	<i>Des Moines, Ia.</i>	Bemis Hall.
Dodds, Torrence Hunter	<i>Greeley, Colo.</i>	423 N. Weber St.
Duvall, Edwin Mather	<i>Colorado Springs.</i>	1117 N. Nevada Ave.
Ellis, Amanda Mae	<i>La Junta, Colo.</i>	Montgomery Hall.
Eppich, Margaret Sophia	<i>Denver, Colo.</i>	Bemis Hall.
Foulk, Theodore Marlowe	<i>Denver, Colo.</i>	911 N. Nevada Ave.
Ferril, Thomas Hornsby	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Fertig, Margaret	<i>Colorado Springs.</i>	115 E. Del Norte.
Field, Mary Louise	<i>Colorado Springs.</i>	422 E. Willamette.
Flegal, Walter Jennings	<i>Clearfield, Pa.</i>	1319 N. Nevada Ave.
Fraker, Charles Frederick	<i>Woodland Park, Colo.</i>	610 E. Griswold St.
Franklin, Alice Virginia	<i>Colorado Springs.</i>	1130 N. Cascade Ave.
Frewen, Elizabeth Martha	<i>Denver, Colo.</i>	Montgomery Hall.
Freyschlag, Carman Pitcher	<i>Colorado Springs.</i>	30 E. Dale St.
Fukuda, Tonau	<i>N. 10, W3, Sapporo, Japan.</i>	Hagerman Hall.
Gabbert, John Martin Slaymaker	<i>Caldwell, Kans.</i>	911 N. Nevada Ave.
Garstin, Harriette Winslow	<i>Colorado Springs.</i>	117 E. Espanola St.
Gildea, Edwin Francis	<i>Colorado Springs.</i>	2220 N. Cascade Ave.
Gill, Lucille Otis	<i>Fort Morgan, Colo.</i>	McGregor Hall.
Givens, Martha	<i>Colorado Springs.</i>	527 N. Tejon St.
Graham, John Woodrow	<i>Denver, Colo.</i>	27 W. Cache la Poudre.
Gregory, Charles Arthur	<i>Manzanola, Colo.</i>	415 E. Bijou St.
Groth, Harvey Charles (E)	<i>Colorado Springs.</i>	1811 N. Corona St.
Grout, Dorothy Ellen	<i>Pueblo, Colo.</i>	Montgomery Hall.
Gutmann, Arthur Adolf	<i>Colorado Springs.</i>	222 N. Weber St.
Hall, Ida	<i>Water Canon, N. M.</i>	Bemis Hall.
Hall, Mary Helen	<i>Ottumwa, Iowa.</i>	Bemis Hall.
Hall, Mary Roana	<i>Denver, Colo.</i>	Bemis Hall.
Halpin, Eleanor Dixon	<i>Mack, Colo.</i>	Montgomery Hall.
Hanes, Creta Helen	<i>Longmont, Colo.</i>	Montgomery Hall.
Harper, Helene	<i>Denver, Colo.</i>	Bemis Hall.
Harrison, Agnes Lavina	<i>Colorado Springs.</i>	1416 S. Nevada Ave.
Hayden, Mary Kathryn	<i>Colorado Springs.</i>	1434 Wood Ave.
Hendershot, Olga	<i>Colorado Springs.</i>	225 E. Uintah St.
Hill, Marguerite Elizabeth	<i>Colorado Springs.</i>	616 E. Willamette St.
Hoag, Barton	<i>Colorado Springs.</i>	729 N. Weber St.
Hoffmann, Sylvester Brandt	<i>Chicago, Ill.</i>	Hagerman Hall.
Hollister, George Eddy (E)	<i>Denver, Colo.</i>	Hagerman Hall.
Holt, Thaddeus Goode	<i>Denver, Colo.</i>	817 N. Weber St.
Hooley, Andrew Joseph	<i>Cable, Ohio.</i>	Hagerman Hall.
Howes, Robert Arthur, Jr.	<i>Colorado Springs.</i>	1106 N. Weber St.
Hughes, Clarence Wm. (B)	<i>Rapid City, S. Dak.</i>	418 N. Tejon St.
Hughes, Edward William	<i>Kiowa, Colo.</i>	719 N. Nevada Ave.
Hughes, Walter Richard	<i>Kiowa, Colo.</i>	1106 N. Weber St.
Hunt, Ralph Van Nice	<i>Denver, Colo.</i>	1319 N. Nevada Ave.

NAME	HOME ADDRESS	CITY ADDRESS
Jeanne, Nellie	<i>Colorado Springs.</i>	301 Cheyenne Blvd.
Johnson, Alan Hawley (E)	<i>Denver, Colo.</i>	Hagerman Hall.
Jones, Eva Elizabeth	<i>Pueblo, Colo.</i>	Montgomery Hall.
Jones, Rene Amos	<i>Fairmont, Ind.</i>	1122 N. Cascade Ave.
Jones, Vera Heinly	<i>Denver, Colo.</i>	Montgomery Hall.
Keener, Annis May	<i>Colorado Springs.</i>	426 E. Cache la Poudre
Keith, Dorothy Ware	<i>Denver, Colo.</i>	Bemis Hall.
Kersten, Hilda Louise	<i>Colorado Springs.</i>	1114 N. Corona St.
Kidwell, Lela Leo	<i>Loveland, Colo.</i>	Bemis Hall.
Kirk, Hazel Charles	<i>Eastonville, Colo.</i>	Bemis Hall.
Knies, Atwood	<i>Flagler, Colo.</i>	1205 N. Nevada Ave.
Knowles, Samuel Fleming	<i>Colorado Springs.</i>	847 E. Cache la Poudre
Kuver, Helen Anna	<i>Trinidad, Colo.</i>	Ticknor Hall.
Kyffin, Frank Idwell (B)	<i>Denver, Colo.</i>	1106 N. Weber St.
Logan, Howard Byron (E)	<i>Colorado Springs.</i>	316 N. Institute St.
Lutin, Gerald Cheavis	<i>Sterling, Colo.</i>	911 N. Nevada Ave.
Lynn, Emerson Ellwood	<i>Loveland, Colo.</i>	9 Beverly Place
McCutcheon, Frances	<i>Greeley, Colo.</i>	Bemis Hall.
Manning, Ethel Marie	<i>Colorado Springs.</i>	Ticknor Hall.
Mantor, Clifford (E)	<i>Longmont, Colo.</i>	109 S. Nevada Ave.
Martin, Louis Everett (B)	<i>Colorado Springs.</i>	2527 N. Nevada Ave.
Martin, William Crary	<i>Trinoli, Iowa.</i>	1224 N. Tejon St.
Meyer, Felicia Theresa	<i>Colorado Springs.</i>	1606 Cheyenne Road
Moore, Carl A.	<i>Colorado Springs.</i>	828 E. Willamette St.
Moore, John Pearce (B)	<i>Colorado Springs.</i>	828 E. Willamette St.
Mosgrove, Helen Elizabeth	<i>Salida, Colo.</i>	Plaza Hotel.
Munro, George Allan (B)	<i>Crow Agency, Mont.</i>	1106 N. Weber St.
Murphy, Mildred Katharine	<i>Decatur, Ill.</i>	McGregor Hall.
Nicholson, Priscilla	<i>Colorado Springs.</i>	110 S. Wahsatch Ave.
Nunn, Russell Joseph (B)	<i>Colorado Springs.</i>	130 N. 7th St.
Ormes, Eleanor Frances	<i>Colorado Springs.</i>	1623 N. Tejon St.
Palmer, Donald Ainslie	<i>Castle Rock, Colo.</i>	1106 N. Weber St.
Parker, Lucy E.	<i>Julesburg, Colo.</i>	Montgomery Hall.
Peirce, Lovell Haskins	<i>Grand Junction, Colo.</i>	Hagerman Hall.
Perrine, Hazel Ruth	<i>Denver, Colo.</i>	Bemis Hall.
Prince, Harriett Kinnear	<i>Denver, Colo.</i>	Montgomery Hall.
Robinson, Rowland John (E)	<i>Colorado Springs.</i>	746 E. Platte Ave.
Root, Viva Margaret	<i>Colorado Springs.</i>	1804 N. Prospect St.
Schreiber, Russell Francis	<i>Colorado Springs.</i>	2302 W. Bijou St.
Schwartz, Rosa	<i>Colorado Springs.</i>	112 N. Nevada Ave.
Scott, Helen Margaret	<i>Colorado Springs.</i>	1402 N. Weber St.
Scott, Ruth Merriman	<i>Iola, Kans.</i>	Bemis Hall.
Scribner, Spencer Crane (B)	<i>Pueblo, Colo.</i>	Plaza Hotel.
Seip, Bert Everett	<i>Los Angeles, Cal.</i>	Plaza Hotel.
Sevitz, Robert James	<i>La Junta, Colo.</i>	1106 N. Weber St.
Shaw, Oren Vern	<i>Colorado Springs.</i>	1228 N. Franklin St.
Sheehan, Helene Catherine	<i>Colorado Springs.</i>	712 N. Spruce St.
Sheldon, Frank Hobbs (E)	<i>Colorado Springs.</i>	3 Beverly Place.

NAME	HOME ADDRESS	CITY ADDRESS
Sims, Irene Neill	<i>Monte Vista, Colo.</i>	McGregor Hall.
Smillie, Cecile Clare	<i>Eaton, Colo.</i>	Bemis Hall.
Smith, Pauline Alberta	<i>Colorado Springs.</i>	1619 S. Tejon St.
Snelling, Edna Bernice	<i>Alamosa, Colo.</i>	Bemis Hall.
Spingler, Wilhelmina Mannle	<i>Colorado Springs.</i>	1120 N. Tejon St.
Steele, Marjorie Elouise	<i>Eaton, Colo.</i>	McGregor Hall.
Sundquist, Lulu Mildred	<i>Alamosa, Colo.</i>	McGregor Hall.
Sutton, James Edward	<i>Denver, Colo.</i>	911 N. Nevada Ave.
Sweet, Dorothy Mary	<i>Denver, Colo.</i>	Ticknor Hall.
Tate, Virginia	<i>Pueblo, Colo.</i>	Bemis Hall.
Thomas, Myrtle Bertha	<i>Colorado Springs.</i>	1326 N. Corona St.
Thompson,		
Thomas Scarborough	<i>Whitney, Ind.</i>	1122 N. Cascade Ave.
Trenner, Rachel Dorothea	<i>Pueblo, Colo.</i>	Montgomery Hall.
Tucker, Martha Christina	<i>Colorado Springs.</i>	1130 N. Nevada Ave.
Verner, Ogden E. (B)	<i>Denver, Colo.</i>	1106 N. Weber St.
Walker, Frances Lucille	<i>Canon City, Colo.</i>	McGregor Hall.
Walter, Thelma Minnie	<i>Silverton, Colo.</i>	Ticknor Hall.
Waugh, John Young	<i>Colorado Springs.</i>	1221 Wood Ave.
Weldie, Ralph Edison (B)	<i>Colorado Springs.</i>	818 N Nevada Ave.
Wheeler, Howard Sidney (B)	<i>Denver, Colo.</i>	510 N. Nevada Ave.
Wigram, Ethel Lenore	<i>Delta, Colo.</i>	Bemis Hall.
Wilcox, Mary Helen	<i>Hotchkiss, Colo.</i>	931 N. Wahsatch Ave.
Wilkin, Philip	<i>Canon City, Colo.</i>	1319 N. Nevada Ave.
Williams,		
Carroll Mortimer (E)	<i>Longmont, Colo.</i>	Hagerman Hall.
Wilson, Arthur Nash	<i>Pueblo, Colo.</i>	1106 N. Weber St.
Wilson, Mabel Christina	<i>Eaton, Colo.</i>	Bemis Hall.
Work, Dorcas	<i>Pueblo, Colo.</i>	Montgomery Hall.

FRESHMEN.

Adams, Robert Dickinson	<i>Colorado Springs.</i>	820 Cheyenne Road.
Allen, Edward Jones (B)	<i>Grand Junction, Colo.</i>	Hagerman Hall.
Allen, Florence	<i>Montrose, Colo.</i>	Bemis Hall.
Angove, William Lewis	<i>Loveland, Colo.</i>	1319 N. Nevada Ave.
Arkwright, Evelyn Swinhoe	<i>Colorado Springs.</i>	1801 Culebra Ave.
Armstrong, Eleanor Louise	<i>Fort Collins, Colo.</i>	McGregor Hall.
Arnold, Evelyn	<i>Colorado Springs.</i>	116 East Dale St.
Austin, Evelyn Annie	<i>Denver, Colo.</i>	McGregor Hall.
Barnes, Joy Darrell	<i>Pueblo, Colo.</i>	McGregor Hall.
Bendure, Zelma Gretchen	<i>Durango, Colo.</i>	Ticknor Hall.
Bickley, Frances Alice	<i>Raton, New Mex.</i>	Bemis Hall.
Bickmore, John Franklin, Jr.	<i>Denver, Colo.</i>	1117 N. Nevada Ave.
Bischof, Jack Frederick (B)	<i>Colorado Springs.</i>	605 N. Cascade Ave.
Bishop, William Bradford (E)	<i>Decatur, Ill.</i>	426 E. Platte Ave.
Bond, Cecil Beecher	<i>Denver, Colo.</i>	1122 N. Cascade Ave.
Black, Robert Foster (E)	<i>Cripple Creek, Colo.</i>	911 N. Nevada Ave.
Bradford, Jane	<i>Woodland Park, Colo.</i>	Ticknor Hall.

NAME	HOME ADDRESS	CITY ADDRESS
Breeden, Beulah Elizabeth	<i>Manitou, Colo.</i>	Manitou.
Brewer, Bernice Mills	<i>Manzanola, Colo.</i>	McGregor Hall.
Bright, Norma Belle	<i>Golden, Colo.</i>	Bemis Hall.
Brooks, Catherine	<i>Colorado Springs.</i>	1324 N. Nevada Ave.
Brown, Kenneth Vernon	<i>Colorado Springs.</i>	316 E. St. Vrain St.
Brunner, George Harmon	<i>Colorado Springs.</i>	112 South 7th St.
Buchanan, Van Kirk	<i>Colorado Springs.</i>	1404 N. Cascade Ave.
Bumstead, Alice May	<i>Colorado Springs.</i>	803 N. Wahsatch Ave.
Burke, James Lee	<i>New Iberia, La.</i>	112 E. Madison St.
Burtis, Harvey Granvill (B)	<i>Montrose, Colo.</i>	1224 N. Tejon St.
Cable, Virginia Allan	<i>Colorado Springs.</i>	Kennebec Ho'el.
Callison, Faye	<i>Salt Lake City, Utah.</i>	McGregor Hall.
Campbell, Evelyn Janet	<i>Colorado Springs.</i>	220 E. Washington St.
Canham, Louise Ormsby	<i>Colorado Springs.</i>	226 E. San Miguel St.
Cannon, John Samuel	<i>Colorado Springs.</i>	710 N. Wahsatch Ave.
Capp, Cozette Elizabeth	<i>Buena Vista, Colo.</i>	Ticknor Hall.
Carpenter, Robert Leland (E)	<i>Trinidad, Colo.</i>	938 E. Costilla St.
Chase, Harold Albert	<i>Colorado Springs</i>	2232 W. Kiowa St.
Chaynten, Abe (E)	<i>Colorado Springs</i>	410 S. Conejos St.
Cheese, Harlan	<i>Peyton, Colo.</i>	1002 Colorado Ave.
Christie, Goldie E.	<i>Belmond, Iowa.</i>	McGregor Hall.
Clark, Paul Garrett (B)	<i>Colorado Springs.</i>	1818 N. Nevada Ave.
Clements, Catherine Jessica	<i>Durango, Colo.</i>	Ticknor Hall.
Coldren, Howard Burt (E)	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
Coleman, Letha Elizabeth	<i>Denver, Colo.</i>	Ticknor Hall.
Collins, Dell Margaret	<i>Colorado Springs.</i>	1124 N. Wahsatch Ave
Collins, Lowell Outwater	<i>Colorado Springs.</i>	317 W. Kiowa St.
Coombs, Viola Frances	<i>Kansas City, Mo.</i>	Montgomery Hall.
Corley, Willard Douglass	<i>Colorado Springs.</i>	2004 N. Nevada Ave.
Culkin, Edmund Anthony	<i>Colorado Springs.</i>	1723 N. Nevada Ave.
Culver, Gladys Lucille	<i>Montrose, Colo.</i>	McGregor Hall.
Cusick, Robert (B)	<i>Colorado Springs.</i>	1407 N. Tejon St.
Davies, Earl Streeter (B)	<i>Colorado Springs.</i>	1530 Cheyenne Blvd.
Davis, Archie Jack, Jr.	<i>Denver, Colo.</i>	Plaza Hotel.
Davis, Florence Mary (B)	<i>Durango, Colo.</i>	McGregor Hall.
Dein, Otto Carlton (E)	<i>Colorado Springs.</i>	815 N. Royer St.
Dennis, Gertrude Bell	<i>Loveland, Colo.</i>	McGregor Hall.
Diltz, Carl Francis (B)	<i>Colorado Springs.</i>	936 Colorado Ave.
Doubt, Dorothy Elizabeth	<i>Hollywood, Cal.</i>	McGregor Hall.
Dunn, Helene Muriel	<i>Denver, Colo.</i>	Ticknor Hall.
Eldridge, Francelia Whitfer	<i>Golden, Colo.</i>	Ticknor Hall.
Elstun, Anna Georgess	<i>Colorado Springs.</i>	1014 N. Weber St.
Emery, Dorothea Francis	<i>Colorado Springs.</i>	1420 N. Nevada Ave.
Emery, Rebecca	<i>Longmont, Colo.</i>	Ticknor Hall.
Emmerson, Theo Gesina	<i>Canon City, Colo.</i>	Bemis Hall.
Erps, Helen Hermina	<i>Colorado Springs.</i>	329 E. Bijou St.
Eslick, Eva Elizabeth	<i>Colorado Springs.</i>	814 N. Arcadia Place
Felt, Margaret	<i>Denver, Colo.</i>	Bemis Hall.

NAME	HOME ADDRESS	CITY ADDRESS
Fischer, Henry Hubert (E)	<i>Colorado Springs.</i>	323 S. Cascade Ave.
Flaherty, Hugh Francis	<i>Colorado Springs.</i>	1629 N. Weber St.
Flanagan, Agnes Barbara	<i>Colorado Springs.</i>	213 Victoria St.
Flora, Frances Elizabeth	<i>Colorado Springs.</i>	2129 N. Nevada Ave.
Foote,	<i>Loveland, Colo.</i>	730 N. Wahsatch Ave.
Wyborn Wallbridge (B)		
Frame, William Melvin	<i>Sterling, Colo.</i>	911 N. Nevada Ave.
Franklin, Ruby Katherine	<i>Severance, Colo.</i>	McGregor Hall.
Freelove, Glen Thomas	<i>Colorado Springs.</i>	10 South 22nd St.
Freeman, Charles Ballou	<i>Denver, Colo.</i>	315 E. Uintah St.
Garnier, Marirose Estelle	<i>Pueblo, Colo.</i>	Bemis Hall.
Gary, Florence Nancy	<i>Pueblo, Colo.</i>	Bemis Hall.
Gaunt, William Woodruff	<i>Brighton, Colo.</i>	817 N. Tejon St.
Geddes, Kenneth William	<i>Colorado Springs.</i>	1019 N. Wahsatch Ave.
Gillespie, Lucille	<i>Bloomington, Ill.</i>	Montgomery Hall.
Gilliland, Ruth Fisher	<i>La Junta, Colo.</i>	McGregor Hall.
Goode, John Vivian (B)	<i>Fort Worth, Tex.</i>	Hagerman Hall.
Green, Neata Madelyn	<i>Denver, Colo.</i>	Bemis Hall.
Greenamyre,		
Dorothy Maurine	<i>Fort Collins, Colo.</i>	McGregor Hall.
Guley, Agnes Blanche	<i>Colorado Springs.</i>	328 N. Nevada Ave.
Haines, Florence	<i>Pueblo, Colo.</i>	Bemis Hall.
Hall, Elizabeth Preston	<i>Colorado Springs.</i>	4 Boulder Crescent
Hamilton, Irena	<i>Canon City, Colo.</i>	Bemis Hall.
Hankins, Marjorie Grace	<i>Pueblo, Colo.</i>	Ticknor Hall.
Hanon, Veda Marie	<i>Colorado Springs.</i>	821 N. Wahsatch Ave.
Harden, Gladys Bernice	<i>Colorado Springs.</i>	225 E. Monument St.
Hardy, Max	<i>Canon City, Colo.</i>	Hagerman Hall.
Hawley, John Blackstock		
McDonald, Jr. (E)	<i>Fort Worth, Tex.</i>	Hagerman Hall.
Hayden, James Gay (B)	<i>Colorado Springs.</i>	1434 Wood Ave.
Heath, Charles Monroe	<i>Colorado Springs.</i>	1511 N. Nevada Ave.
Heustis, Ruth Marjorie	<i>Colorado Springs.</i>	937 Cheyenne Blvd.
Hewitt, Elsie	<i>Platteville, Colo.</i>	Bemis Hall.
Hibbs, Charlotte	<i>Denver, Colo.</i>	McGregor Hall.
Hills, Justin Elijah	<i>New York City.</i>	2115 N. Nevada Ave.
Hobbs, Eleanor Williams	<i>Denver, Colo.</i>	McGregor Hall.
Honnen, Edward Herman (E)	<i>Colorado Springs.</i>	310 E. Dale St.
Hoon, Dorothy Grace	<i>Colorado Springs.</i>	418 E. Kiowa St.
Horney, Catherine Theresa	<i>Colfax, Ill.</i>	Ticknor Hall.
Hounsle , Wayne William	<i>Colorado Springs.</i>	1513 N. Weber St.
Hunt, Lois Rebecca	<i>Colorado Springs.</i>	530 N. Nevada Ave.
Jackson, Joseph Perry	<i>Colorado Springs.</i>	2206 W. Pikes Peak Av.
Jarvis, Russell Boyden (B)	<i>Montrose, Colo.</i>	1130 N. Nevada Ave.
Jewell, Lura Marion	<i>Colorado Springs.</i>	10 W. Mill St.
Johnson, Leo Plympton	<i>Cleveland, Ohio.</i>	12 Ivy Place.
Jolly, Hazael Claire	<i>Pueblo, Colo.</i>	Ticknor Hall.
Kennedy, William Thomas	<i>Colorado Springs.</i>	842 E. Moreno St.
Krebs, T. Leland (B)	<i>Montrose, Colo.</i>	1224 N. Tejon St.

NAME	HOME ADDRESS	CITY ADDRESS
Kubal, Caroline Belle	<i>Geddes, S. Dak.</i>	Y. W. C. A.
Lamb, William Edward, Jr.	<i>Denver, Colo.</i>	1106 N. Weber St.
Landell, Catherine Sally	<i>Fort Lupton, Colo.</i>	Bemis Hall.
Lapsley, Smith Herman (E)	<i>Prescott, Kans.</i>	422 W. Bijou St.
Lawton, Joseph	<i>Cleveland, Okla.</i>	2416 N. Weber St.
Lawton, Mary Hester	<i>Colorado Springs.</i>	Latonia Apartments
Layman, Gladys Eudora	<i>Hutchinson, Kans.</i>	Montgomery Hall.
Layman, Hazel Bernadine	<i>Hutchinson, Kans.</i>	Montgomery Hall.
Lazonby, Virginia	<i>Kansas City, Mo.</i>	Bemis Hall.
Lennon, Howard Adams (E)	<i>Watertown, N.Y.</i>	Hagerman Hall.
Lennon, Raymond Lloyd	<i>Watertown, N.Y.</i>	Hagerman Hall.
Lewis, Frances Martha	<i>Rocky Ford, Colo.</i>	807 N. Weber St.
Lewis, Leland McBee (B)	<i>Rocky Ford, Colo.</i>	1122 N. Cascade Ave.
Lieberthal,		
Harold Mortimer (E)	<i>Colorado Springs.</i>	322 E. Cache la Poudre
Liljestrom, Carl Roger	<i>Pueblo, Colo.</i>	1117 N. Nevada Ave.
Little, Franklin Rockafellow	<i>Canon City, Colo.</i>	Hagerman Hall.
Lloyd, Charles Henry (B)	<i>Jacksonville, Fla.</i>	1122 N. Cascade Ave.
Lurton, Christine	<i>Pueblo, Colo.</i>	McGregor Hall.
Lyons, Mary Margaret	<i>Durango, Colo.</i>	McGregor Hall.
Lytle, Helen Hortense	<i>Fort Morgan, Colo.</i>	McGregor Hall.
McCarty, Thomas C.	<i>Augusta, Kansas.</i>	404 Manitou Road.
McCool, James Madison	<i>Okolona, Miss.</i>	415 E. Kiowa St.
McCoy, Richard Boyd (B)	<i>Colorado Springs.</i>	326 E. Monument St.
MacDougall,		
Donald Seymour (B)	<i>Denver, Colo.</i>	1319 N. Nevada Ave.
McFadzean, Neil P.	<i>Del Norte, Colo.</i>	735 N. Tejon St.
McIntyre, Katherine	<i>Pueblo, Colo.</i>	McGregor Hall.
McMillan, Donald Charles (E)	<i>Denver, Colo.</i>	1122 N. Cascade Ave.
McMullen, Mary Sophia	<i>Delta, Colo.</i>	Ticknor Hall.
MacTavish, Earl D.	<i>Colorado Springs.</i>	707 N. Corona St.
Marsh, Helen Gardner	<i>Pueblo, Colo.</i>	McGregor Hall.
Matthews, Marian Dorothy	<i>Roswell, Colo.</i>	515 N. Main St.
Miles, Bernice Madison	<i>Hayden, Colo.</i>	931 N. Weber St.
Mobley, Frank Marion	<i>Monument, Colo.</i>	1125 N. Nevada Ave.
Morrison, Ruth Emily	<i>Colorado Springs.</i>	1223 Grant Ave.
Morton, Helen MacKenzie	<i>Colorado Springs.</i>	1928 N. Nevada Ave.
Moss, Daniel Roland (B)	<i>Jacksonville, Fla.</i>	1122 N. Cascade
Moye, Dale Paul	<i>Colorado Springs.</i>	315 E. Uintah St.
Murphy, Lena Leona	<i>Rifle, Colo.</i>	Manitou.
Napier, St. Clair	<i>Glenwood Springs,</i>	McGregor Hall.
Newman,	<i>Colo.</i>	
Harry Jackson, Jr. (E)	<i>Colorado Springs.</i>	1627 N. Nevada Ave.
Noble, Lorraine Emily	<i>Rocky Ford, Colo.</i>	Bemis Hall.
Paine, Helene Avis	<i>Colorado Springs.</i>	1129 N. Nevada Ave.
Pearson, Agnes Maud	<i>Duluth, Minn.</i>	27 W. Cache la Poudre St.
Perkins, Miriam	<i>Colorado Springs.</i>	1219 N. Tejon St.

NAME	HOME ADDRESS	CITY ADDRESS
Philo, Helen	<i>Durango, Colo.</i>	Montgomery Hall.
Philo, Mabel Alice	<i>Durango, Colo.</i>	Montgomery Hall.
Pike, Zebulon Montgomery	<i>Golden, Colo.</i>	Plaza Hotel.
Purinton, Raymond Foote	<i>Rocky Ford, Colo.</i>	1224 N. Tejon St.
Rhodes, Hattie Belle	<i>Manitou, Colo.</i>	Montgomery Hall.
Ripley, William Edward (E)	<i>Colorado Springs.</i>	1148 Lincoln Ave.
Rischell, William Gardner	<i>Burr Oak, Kans.</i>	838 E. Monument St.
Ritter, Neva Lola	<i>Glenwood Springs, Colo.</i>	Ticknor Hall.
Sabin, James North	<i>Denver, Colo.</i>	
Sargent, Lucile Frances	<i>Wiley, Colo.</i>	Bemis Hall.
Scille, Margaret	<i>Loveland, Colo.</i>	Ticknor Hall.
Scott, Angelo Campbell	<i>Iola, Kans.</i>	Plaza Hotel.
Scribner, Miriam Phyllis	<i>Pueblo, Colo.</i>	McGregor Hall.
Sears, Helen Aretha	<i>Trinidad, Colo.</i>	Bemis Hall.
Shaffer, David Harrell	<i>Colorado Springs.</i>	524 N. Cascade Ave.
Shaw, Helen Martha	<i>Las Animas, Colo.</i>	Montgomery Hall.
Sheppard, Naomi Lois	<i>Eaton, Colo.</i>	Bemis Hall.
Silver, Marie Catherine	<i>Lamar, Colo.</i>	Bemis Hall.
Simpson, Orrin Curtis	<i>Colorado Springs.</i>	115 S. Weber St.
Sims, Marian Thompson	<i>Monte Vista, Colo.</i>	McGregor Hall.
Sinden, Alfred Delos (E)	<i>Canon City, Colo.</i>	Hagerman Hall.
Slusher, Patty Nellie	<i>Cripple Creek, Colo.</i>	McGregor Hall.
Smith, Helen Bernice	<i>Colorado Springs.</i>	1646 Grant Ave.
Smith, Harold Willis	<i>Seibert, Colo.</i>	1609 Cheyenne Road.
Snyder, John Benjamin	<i>Grand Junction, Colo.</i>	1123 N. Weber St.
Spencer, Emily Frances	<i>Colorado Springs.</i>	2015 N. Tejon St.
Staff, Helen	<i>Colorado Springs.</i>	1343 N. Nevada Ave.
Staley, Saunders Skeen (B)	<i>Colorado Springs.</i>	2024 N. Nevada Ave.
Stetson, Albert Day	<i>Colorado Springs.</i>	722 N. Weber St.
Stevens, Ruth	<i>Castle Rock, Colo.</i>	Montgomery Hall.
Stone, Dorothy Betsey	<i>Del Norte, Colo.</i>	McGregor Hall.
Strachan, William Ronald	<i>Long Beach, Cal.</i>	1122 N. Cascade Ave.
Stream, Bernice Pauline	<i>Sedalia, Colo.</i>	Ticknor Hall.
Strong, Dorothy	<i>Denver, Colo.</i>	McGregor Hall.
Sundquist, Helen Madeline	<i>Alamosa, Colo.</i>	Ticknor Hall.
Sweet, Benjamin Emerson	<i>Denver, Colo.</i>	1410 N. Tejon St.
Taggart, Wm. Rockwell	<i>Edgewater, Colo.</i>	1305 N. Cascade Ave.
Taylor, Clarence John (B)	<i>Colorado Springs.</i>	234 N. Chestnut St.
Taylor, Lura Abbie	<i>La Grange, Ill.</i>	107 S. Nevada Ave.
Tucker, Harland (E)	<i>Colorado Springs.,</i>	317 E. Cache la Poudre St.
Tunnick, Ruth Alvertia	<i>Castle Rock, Colo.</i>	Montgomery Hall.
Wantland, Dart (E)	<i>Denver, Colo.</i>	1125 N. Nevada Ave.
Ward, Marian Elizabeth	<i>Greeley, Colo.</i>	Ticknor Hall.
Watson, Athelene	<i>Colfax, Ill.</i>	630 N. Weber St.
Weller, Hiram Dillard (B)	<i>Maitland, Mo.</i>	911 N. Nevada Ave.
Wheeler, Horace Edward	<i>Pueblo, Colo.</i>	Plaza Hotel.

NAME	HOME ADDRESS	CITY ADDRESS
White, Alice Frances	<i>Silverton, Colo.</i>	McGregor Hall.
White, Dorothy Winona	<i>Greeley, Colo.</i>	Montgomery Hall.
White, Margaret Rachael	<i>Colorado Springs.</i>	21 Cheyenne Blvd.
Whitehead, Earle Oscar	<i>Colorado Springs.</i>	421 E. Cucharas St.
Whitehill, Sarah Margaret	<i>Boone, Iowa.</i>	McGregor Hall.
Wiley, Bernice Eugenia	<i>Del Norte, Colo.</i>	Ticknor Hall.
Williams, Forrest Hunter	<i>Colorado Springs.</i>	229 E. Willamette St.
Williams, George Karl (E)	<i>Ainsworth, Nebr.</i>	Hagerman Hall.
Wilmore, Clara Evelyn	<i>Wheatridge, Colo.</i>	McGregor Hall.
Wilson, Francis Jennings (B)	<i>Colorado Springs.</i>	844 E. Willamette St.
Wilson, Lester Robert	<i>Fountain, Colo.</i>	
Winterringer, Gertrude Harley	<i>Tulsa, Okla.</i>	McGregor Hall.
Work, Robert Van Horn (E)	<i>Pueblo, Colo.</i>	1122 N. Cascade Ave.
Wright, Joe Douglas	<i>Colorado Springs.</i>	1117 N. Nevada Ave.
Wright, Ramona May	<i>Denver, Colo.</i>	Ticknor Hall.
Wright, Stanley Robert	<i>Colorado Springs.</i>	1024 N. Corona St.
Wubben, John Hubert	<i>Colorado Springs.</i>	920 Cheyenne Road.
Yancy, Myra Lois	<i>Colorado Springs.</i>	509 Cheyenne Road.
Yates, Russell Metzler (B)	<i>Colorado Springs.</i>	418 N. Tejon St.
Zimmerman, Ruth Ellen	<i>Weitzer, Colo.</i>	Ticknor Hall.

SPECIALS.

Ackerman, Jessie M.	<i>Denver, Colo.</i>	Plaza Hotel.
Allen, Louise Selden	<i>Colorado Springs.</i>	110 E. Caramillo St.
Arnold, Berthe L.	<i>Colorado Springs.</i>	116 E. Dale St.
Bartlett, Mrs. Florence E.	<i>Santa Fe, N. Mex.</i>	Montgomery Hall.
Bergey, Beulah	<i>Colorado Springs.</i>	Antlers Hotel.
Blom, Bergitte	<i>Colorado Springs.</i>	616 N. Weber St.
Bower, Kathryn	<i>Guthrie Center, Ia.</i>	2012 N. Tejon St.
Burgess, Samuel T.	<i>Colorado Springs.</i>	801 N. Corona St.
Canham, Lottie N.	<i>Jamestown, N. Dak.</i>	226 E. San Miguel St.
Clarahan, Mary M.	<i>Colorado Springs.</i>	632 N. Nevada Ave.
Cohen, Eleanor F.	<i>Philadelphia, Pa.</i>	632 N. Nevada Ave.
Connell, Madeline	<i>Colorado Springs.</i>	2 E. Columbia St.
Day, Mary	<i>Boulder, Colo.</i>	2008 N. Tejon St.
Dice, Mrs. Anna M.	<i>Colorado Springs.</i>	1224 N. Weber St.
Dunton, Vera Marguerite	<i>Colorado Springs.</i>	2011 N. Nevada Ave.
Foster, Jessie Edith	<i>Colorado Springs.</i>	1331 N. Tejon St.
Frazer, J. Raymond	<i>Mt. Carroll, Ill.</i>	727 N. Weber St.
Gulliford-Smith, Madame	<i>Colorado Springs.</i>	
Hartenstein, Helen	<i>Buena Vista, Colo.</i>	
Heller, Mrs. C. E.	<i>Colorado Springs.</i>	1307 N. Weber St.
Hickox, Mrs. Edward J.	<i>Colorado Springs.</i>	Plaza Hotel.
Holland, Mrs. Paul A.	<i>Colorado Springs.</i>	609 N. Tejon St.
Hoon, Helen May	<i>Colorado Springs.</i>	418 E. Kiowa St.
Johnson, Bessie		
Kellerman, Josephine	<i>Colorado Springs.</i>	1342 N. Wahsatch

NAME	HOME ADDRESS	CITY ADDRESS
Kerby, Mrs. Claris M.	<i>Colorado Springs.</i>	715 E. Costilla St.
Krause, Dorothy	<i>Colorado Springs.</i>	1421 Wood Ave.
Little, Marion	<i>Colorado Springs.</i>	809 N. Nevada Ave.
Lloyd, Marion	<i>Colorado Springs.</i>	Broadmoor.
McAdoo, Ola E.	<i>Springfield, Mo.</i>	815 N. Weber St.
Marshall, Violet Baker	<i>Colorado Springs.</i>	632 N. Nevada Ave.
Massey, Frances Ward	<i>Colorado Springs.</i>	125 S. Nevada Ave.
Osborne, Dorothy Delano	<i>Colorado Springs.</i>	318 E. San Rafael St.
Parsons, Elizabeth J.	<i>Colorado Springs.</i>	1130 Wood Ave.
Pennock, Walter James	<i>Philadelphia, Pa.</i>	Y. M. C. A.
Schmitt, Bertha Hermina	<i>Colorado Springs.</i>	1 Columbia Apts.
Tyler, Mignonne	<i>Niles, Mich.</i>	1215 N. Nevada Ave.
Wallace, Ralph William	<i>Colorado Springs.</i>	1525 N. Weber St.
Wilson, H. Margaret	<i>Manitou.</i>	Rockledge.
Yokozawa, Tsugi	<i>Negihi Sendai, Japan</i>	Ticknor Hall.

SCHOOL OF MUSIC

NAME	HOME ADDRESS	CITY ADDRESS
Black, Elsie Dell	<i>Colorado Springs.</i>	25 S. Corona St.
Blackman, Ida	<i>Colorado Springs.</i>	1806 Wood Ave.
Bourne, Angela	<i>Colorado Springs.</i>	808 N. Tejon St.
Brown, Ruth Thompson	<i>Colorado Springs.</i>	1105 N. Weber St.
Brayles, Eugene	<i>Colorado Springs.</i>	314 N. Sheridan St.
Capp, Cozette	<i>Buena Vista, Colo.</i>	Ticknor Hall.
Carroll, Nathalie	<i>Colorado Springs.</i>	306 E. Bijou St.
Chase, Harold Albert	<i>Colorado Springs.</i>	2233 W. Kiowa St.
Childs, Thelma May	<i>Colorado Springs.</i>	311 E. Costello.
Clemans, Martha Elizabeth	<i>Colorado Springs.</i>	17 E. Dale St.
Clements, Catherine Jessica	<i>Durango, Colo.</i>	Ticknor Hall.
Cowan, Jessie Augusta	<i>Brewster, Colo.</i>	1424 N. Nevada Ave.
Davies, Earl Streeter	<i>Colorado Springs.</i>	629 N. Weber St.
Day, Mary	<i>Colorado Springs.</i>	2008 N. Tejon St.
Deane, Ruth	<i>Colorado Springs.</i>	417 N. Pine St.
Denio, Lois	<i>Colorado Springs.</i>	25 E. Las Animas St.
Dunn, Mary Olive	<i>Colorado Springs.</i>	
Dunton, Vera Marguerite	<i>Colorado Springs.</i>	2011 N. Nevada Ave.
Durborow, Sara	<i>Colorado Springs.</i>	1613 Wood Ave.
Fischer, Claribel Ben Hur	<i>Santa Fe, N. Mex.</i>	931 N. Weber St.
Effinger, Stanlev	<i>Colorado Springs.</i>	
Emmons, Mrs. K. P.	<i>Colorado Springs.</i>	114 W. Del Norte.
Flora, Frances Elizabeth	<i>Colorado Springs.</i>	2129 N. Nevada Ave.
Gill, Lucile Otis	<i>Fort Morgan, Colo.</i>	McGregor Hall.
Gillespie, Lucile	<i>Bloomington, Ill.</i>	Montgomery Hall.
Grace, Helen	<i>Colorado Springs.</i>	2330 W. Kiowa St.
Griswold, Beryl	<i>Colorado Springs.</i>	915 N. Weber St.
Gudger, Olive	<i>Colorado Springs.</i>	322 E. San Rafael St.
Hale, Donald Emerson	<i>Colorado Springs.</i>	1424 N. Nevada Ave.
Hale, Helen Bartlett	<i>Colorado Springs.</i>	1424 N. Nevada Ave.
Hall, Mary Roana	<i>Denver, Colo.</i>	Bemis Hall.
Hartenstein, Helen Louise	<i>Buena Vista, Colo.</i>	315 E. Yampa St.
Heinicke, Helene	<i>Colorado Springs.</i>	529 E. Bijou St.
Houston, Stella	<i>Colorado Springs.</i>	20 E. San Rafael St.
Jarvis, Russell Boynton	<i>Colorado Springs.</i>	1319 N. Nevada Ave.
Kennedy, Margaret	<i>Colorado Springs.</i>	122 S. 16th St.
Keith, Dorothy Ware	<i>Denver, Colo.</i>	Bemis Hall.
Kidwell, Lela Leo	<i>Loveland, Colo.</i>	McGregor Hall.
Kirk, Hazel Charles	<i>Eastonville, Colo.</i>	Bemis Hall.
Koch, Dorothy	<i>Aspen, Colo.</i>	Bemis Hall.
Korsmeyer, Helen	<i>Colorado Springs.</i>	1411 N. Weber St.
Lawton, Mary Hester	<i>Colorado Springs.</i>	Latonia Apartments
Mahan, Judith	<i>Ivywild.</i>	31 10th St.
Maston, Christal	<i>Colorado Springs.</i>	1424 W. Kiowa St.
McCuan, Sarah	<i>Colorado Springs.</i>	930 N. Weber St.
Morris, Mrs. Mary A.	<i>Colorado Springs.</i>	Alta Vista Hotel.

NAME	HOME ADDRESS	CITY ADDRESS
Rhinehart, Josephine	<i>Fountain, Colo.</i>	1239 Wood Ave.
Rane, Martha	<i>Colorado Springs.</i>	643 E. St. Vrain St.
Roche, Julia	<i>Colorado Springs.</i>	421 E. Boulder St.
Rodgers, Cecil	<i>Colorado Springs.</i>	McGregor Hall.
Sargent, Lucile	<i>Wiley, Colo.</i>	1125 N. Nevada Ave.
Shemwell, Dorothy	<i>Colorado Springs.</i>	Hagerman Hall.
Sinden, Alfred	<i>Canon City, Colo.</i>	Red Craggs.
Smith, Eloise	<i>Manitou, Colo.</i>	22 E. Jefferson St.
Spangenberg, Geraldine	<i>Colorado Springs.</i>	1404 N. Weber St.
Stahl, Helen	<i>Denver, Colo.</i>	McGregor Hall.
Steele, Marjorie	<i>Eaton, Colo.</i>	808 N. Weber St.
Stelson, Faye	<i>Colorado Springs.</i>	808 N. Weber St.
Stelson, Julia	<i>Colorado Springs.</i>	15 Ramona Ave.
Stillman, W. C.	<i>Ivywild.</i>	1712 N. Nevada Ave.
Stratton, Anne	<i>Colorado Springs.</i>	Bemis Hall.
Stone, Dorothy	<i>Del Norte, Colo.</i>	McGregor Hall.
Strong, Dorothy Flinn	<i>Denver, Colo.</i>	935 N. Pine St.
Tubbs, Lois	<i>Colorado Springs.</i>	1215 N. Nevada Ave.
Tyler, Mignonne	<i>Colorado Springs.</i>	Ticknor Hall.
Walter, Thelma Minnie	<i>Silverton, Colo.</i>	McGregor Hall.
Williams, Elsa Leigh	<i>Colby, Kansas.</i>	Rockledge.
Wilson, Margaret	<i>Manitou, Colo.</i>	832 N. Cascade Ave.
Young, Mrs. George B.	<i>Colorado Springs.</i>	

SUMMARY.

Graduate Students	1
Seniors	73
Juniors	67
Sophomores	150
Freshmen	221
Specials and Visitors	40
<hr/>	
Undergraduates	551
<hr/>	
Total	552
School of Music	69
<hr/>	
	621
Names Counted Twice	26
<hr/>	
Grand Total	595

Index

	Page		Page
Academy of Fine Arts.....	114	Civil Engineer and Electrical Engineer,	
Accredited Schools	30	Degrees of	47
Administration, Officers of.....	11	Class Officers	22
Admission by Certificate.....	30	College Buildings	116
Admission to Advanced Standing.....	31	College Lecture Course.....	134
Admission, Requirements for—		College, Organization of.....	7
In Departments of Arts and Sciences		College Publication	133
and Business Administration and		Commencement, 1917	142-143
Banking ..	23	Committees of the Faculty.....	21
In Departments of Engineering and		Committees of the Trustees.....	10
Forestry ..	24	Courses of Instruction.....	49-106
In Department of Music.....	108	Art ..	49
Advanced Degrees	46	Astronomy ..	50
Alumni Association	134	Biblical Literature and Applied Re-	
Art and Music, Major in.....	112	ligion ..	51
Art Collections	120	Biology ..	52
Art, Courses in.....	49	Business Administration and Bank-	
Astronomy—		ing ..	57
Courses in	50	Chemistry ..	60
Observatory and Meteorological Sta-		Civil and Irrigation Engineering.....	64
tion ..	127	Economics and Sociology.....	69
Bachelor of Arts Degree.....	33	Education ..	71
Bachelor of Arts in Business Adminis-		Electrical Engineering	73
tration and Banking, Degree of.....	36	English ..	77
Bachelor of Science in Civil and Irrig-		Forestry ..	80
ation Engineering, Degree of.....	39	Geology ..	83
Bachelor of Science in Electrical Engi-		German ..	84
neering, Degree of.....	41	Graphics ..	86
Bequest, Forms of.....	141	Greek ..	87
Biblical Literature and Applied Relig-		History ..	88
ion, Courses in.....	51	Latin ..	91
Biology—		Mathematics ..	93
Courses in	52	Music ..	94
Entrance Requirements in.....	29-30	Philosophy ..	94
Laboratories ..	121	Physical Education	96
Buildings, College	116	Physics ..	98
Business Administration and Banking,		Political Science	100
Courses in	57	Public Speaking	101
Calendar ..	5	Romance Languages	101
Chemistry—		Shop Work	105
Courses in	66	Teachers, Courses for.....	106
Entrance Requirements in.....	29	Degrees, Authority to Confer.....	8
Laboratories ..	122	Degrees Conferred in 1917.....	143-144
Civil and Irrigation Engineering—		Degrees, Requirements for—	
Courses in	64	Advanced ..	46
Laboratories ..	124	Bachelor of Arts.....	33-36

	Page		Page
Bachelor of Arts in Business Administration and Banking.....	36-38	Entrance Requirements in.....	28
Bachelor of Science in Civil and Irrigation Engineering.....	39-41	Graduate Students	145
Bachelor of Science in Electrical Engineering ..	41-44	Graphics, Courses in.....	86
Civil Engineer and Electrical Engineer ..	47	Greek—	
Forest Engineer	44	Courses in	87
General Rules	33	Entrance Requirements in.....	28
Master of Arts.....	47	Harvard Exchange	48
Department of Music—		Historical Statement	6
Admission ..	108	History—	
Courses of Study.....	108	Courses in	88
Equipment ..	112	Entrance Requirements in.....	27
Faculty ..	107	Honors, 1917	142
Major in Art and Music.....	112	Hospital Fund	139
Students in	158-159	Illustrative Apparatus and Material.....	125
Tuition ..	112	Instruction, Courses of; see Courses of Instruction.	
Economics and Sociology, Courses in....	69	Italian; see Romance Languages.	
Education, Courses in.....	71	Laboratories and Apparatus—	
Electives for Bachelor of Arts.....	36	Biology ..	121
Electrical Engineering—		Chemistry ..	122
Courses in	73	Civil Engineering	124
Laboratories ..	126	Electrical Engineering	126
English—		Geology ..	122
Courses in	77	Illustrative Apparatus and Material..	125
Entrance Requirements in.....	25	Manitou Forest—Field Laboratory in Forestry ..	126
Entrance Requirements; see Requirements for Admission.		Observatory and Meteorological Station ..	127
Expenses ..	134	Physics ..	123
Faculty ..	12	Psychology ..	123
Faculty in Department of Music.....	107	Shops ..	123
Faculty, Committees of.....	21	Surveying—Summer School	125
Forest Engineer, Degree of.....	44	Latin—	
Forestry—		Courses in	91
Courses in	80	Entrance Requirements in.....	27
Manitou Forest—Field Laboratory in Forestry ..	126	Lecture Course, College.....	134
Forms of Bequest.....	141	Library ..	119
French; see Romance Languages.		Literary Societies	132
General Information	116	Location of College.....	116
General Rules for Degrees.....	33	Major in Art and Music.....	112
Geology—		Major Subject for Bachelor of Arts.....	35
Courses in	83	Manitou Forest—a Field Laboratory in Forestry ..	126
Entrance Requirements in.....	30	Master of Arts, Degree of.....	47
Laboratories ..	122	Mathematics—	
German—		Courses in	93
Courses in	84	Entrance Requirements in.....	27
		Museum ..	128
		Music, Courses in.....	108

	Page		Page
Music, Department of; see Department of Music.		Romance Languages—	
Needs of College.....	139	Courses in	101
Observatory and Meteorological Station	127	Entrance Requirements in.....	29
Officers of Administration	11	Scholarships ..	136
Oratorical and Debating Contests.....	132	Scholarships Awarded, 1917.....	142
Organization of the College.....	7	Shop Work—	
Phi Beta Kappa.....	133	Courses in	105
Phi Beta Kappa Elections, 1917.....	142	Shops ..	123
Philosophy, Courses in.....	94	Spanish; see Romance Languages.	
Physical Education, Courses in.....	96	Special Students	32
Physics—		Student Commission of Colorado Col- lege, The	132
Courses in	98	Student Publications	132
Entrance Requirements in.....	29	Students, Register of—	
Laboratories ..	123	Graduate Students	145
Political Science, Courses in.....	100	Seniors ..	145
Public Lectures and Readings.....	134	Juniors ..	146
Public Speaking, Courses in.....	101	Sophomores ..	148
Publication, College	133	Freshmen ..	151
Publications, Student	132	Specials and Registered Visitors.....	156
Registration ..	23	Department of Music.....	158
Religious Life ..	130	Summary ..	159
Requirements for Admission—		Summary of Students.....	159
In Departments of Arts and Sciences, and Business Administration and Banking ..	23	Surveying—Summer School.....	125
In Departments of Engineering and Forestry ..	24	Teachers, Courses for.....	106
In Department of Music.....	108	Trustees ..	9
Requirements for Degrees; see Degrees, Requirements for.		Trustees, Committees of.....	10
		Tuition ..	134
		Tuition in Music.....	112
		Undergraduates ..	145-156
		Unit Courses Required for Admission....	25
		Woman's Educational Society.....	138



M.C.

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